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THE STATE OF AUDIOVISUAL TECHNOLOGY--1961-1966, MONOGRAPH NO. 3.

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THE USE OF AUDIOVISUAL TECHNOLOGY OVER A SIX YEAR PERIOD WAS STUDIED. FROM A BASE OF 2,927 SCHOOL DISTRICTS, 238 DISTRICTS WERE STUDIED TO DETERMINE THE RESOURCES AVAILABLE, THE EXTENT OF USE OF THESE RESOURCES, FACTORS WHICH ENCOURAGE OR INHIBIT USE, AND PROSPECTS FOR THE FUTURE. ESTIMATES OF AMOUNTS OF ELEVEN ITEMS OF EQUIPMENT AND FIVE MATERIALS WERE MADE. LIKEWISE, ESTIMATES OF NEEDS WERE MADE. THE SECOND PHASE OF THE PROJECT INCLUDED THE DISTRIBUTION OF AUDIOVISUAL RESOURCES, TEACHER USE OF THESE RESOURCES, AND THE CLIMATE OF STAFF OPINION. FACTORS ASSOCIATED WITH THE USE OF THESE RESOURCES INCLUDED THE PROPORTION OF TEACHERS WHO USE AUDIOVISUAL MATERIAL AT ALL, THE PROPORTION WHO USE ANY ONE MATERIAL FREQUENTLY, OR THE PROPORTION WHO USE A VARIETY OF MEDIA. THE CLIMATE OF OPINION WAS ANALYZED IN TERMS OF THE CENTRALITY OF AUDIOVISUAL TECHNOLOGY IN THE TEACHING PROCESS, THE PROBLEMS WHICH HINDER EFFECTIVE USE OF AUDIOVISUAL MEDIA, AND THE PLANS FOR FUTURE USE OF VARIOUS MATERIALS. THE EXAMINATION OF CHANGE IN THIS TECHNOLOGY INCLUDED THE EXTENT AND DIRECTION OF CHANGE AS WELL AS THE IMPACT OF VARIOUS SCHOOL DISTRICT CHARACTERISTICS. FORECASTS FOR THE FUTURE (1966-67) WERE DRAWN FROM STUDIES MADE IN 1961 AND 1964. THIS DOCUMENT IS AVAILABLE FOR $6.00 FROM THE NATIONAL EDUCATION ASSOCIATION, 1201 SIXTEENTH STREET, N.W., WASHINGTON, D.C. 20036. (STOCK NO. 071-02872). (BD)

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The State of Audiovisual Technology: 1961-1966

Eleanor P. Godfrey

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[redacted]

The State of Audiovisual Technology: 1961-1966

ELEANOR P. GODFREY

The Bureau of Social Science Research, Inc.
Washington, D. C.

DEPARTMENT OF AUDIOVISUAL INSTRUCTION
NATIONAL EDUCATION ASSOCIATION
OF THE UNITED STATES

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Foreword

Five years ago the Department of Audiovisual Instruction published Occasional Paper No. 6 of the National Education Association's Technological Development Project. It was *Studies in the Growth of Instructional Technology, I: Audiovisual Instrumentation for Instruction in the Public Schools, 1930-1960, A Basis for Take-Off* by James D. Finn, Donald G. Perrin, and Lee E. Campion. With its unique data sources and its thoughtful projections, that volume will be an important supplement to Eleanor Godfrey's studies which we are pleased to present herein as Number 3 in the DAVI Monograph Series.

Dr. Godfrey, her associates at The Bureau of Social Science Research, Inc., and the many educational media specialists and school administrators in all parts of the country who have worked with her are to be congratulated by the education community for this timely and significant Monograph. The educational business community will also find this work of considerable interest and value at a time when information about educational technology is in great demand for better planning to meet school needs.

The great problem with any technology has always been the so-called man-machine relationship, and we are pleased that Dr. Godfrey has given attention to this important aspect of audiovisual technology in her studies. As further data are gathered and as additional work is done in the areas covered by this DAVI Monograph, we shall call it to the attention of DAVI members on the pages of our monthly magazine, *Audiovisual Instruction*, and our quarterly journal, *AV Communication Review*.

DAVI is grateful to Eleanor Godfrey, a social scientist of the first order, for this significant contribution; and to the U.S. Office of Education for its support of the original Godfrey studies on which this Monograph is based.

ANNA L. HYER

Executive Secretary
Department of Audiovisual Instruction
National Education Association

Preface

In speaking to the 1966 annual meeting of the Council of Chief State School Officers, Cecil J. Hannon, Assistant Executive Secretary for Professional Development and Welfare of the National Education Association, had this to say about educational technology: "A plain bar of iron is worth $5.00. Made into horseshoes it is worth $10.50; into needles, $4,285; into balance wheels for watches it is worth $250,000. The same might be said of the new technology in education—its value will be determined by what you make of it."

Throughout this monograph we will examine what a sample of school districts has made of audiovisual technology over a critical six-year period of ferment in instructional methodology. The investigation looks at the resources available, the extent to which these resources were used, factors that encourage or inhibit use, and prospects for the future. Baseline data were obtained from 2,927 school district administrators in 1961. Two hundred and thirty-eight of these districts were surveyed in 1962 in order to establish empirical norms of teacher use of audiovisual materials. In 1964 these same 238 districts supplied information about inventory changes since 1961 and plans for 1966. The prediction of 1967 inventory levels presented in Chapter 7 is constructed from the data obtained from the three surveys.

A project of this magnitude and duration requires the talents, efforts, and endurance of many. Over the six-year period several members of the Bureau staff served on the research team. Frank G. Davis helped design the study and the initial sample of districts and kept track of subsequent changes in the organization of school administrative units. William E. Alexander conducted the survey of late respondents for Phase I and was responsible for all field operations for Phase II. Barbara S. Heller helped construct the five questionnaires and supervised the coding for Phase II. Ivor Wayne and Nancy Kingsbury added a new dimension to the study through their analysis of the relationship between teacher characteristics and media use. Thomas Lorimer took major responsibility for the collection and analysis of the data for the 1964 administrative resurvey. E. Leo Edwards, Judith A. Selis, Edward J. McCullough, and Donna E. Rosen reduced the mass of data to meaningful tables. Rosa Greene, June License, Winona Heyl, and Antonette Simplicio shared the task of producing an intelligible manuscript.

In addition to the project staff, we are indebted to many of our colleagues for their advice and cooperation. Harold E. Bright, Samuel B. Lyerly, and Richard G. Godfrey critically reviewed the methodology and conclusions. James D. Finn, Lee E. Campion, and Thomas W. Hope not only gave us permission to reproduce their data, but the benefit of their broad experience in the field. Seth Spaulding, James McPherson, Thomas Clemens, and Arnold Heyl of the U. S. Office of Education maintained their support and encouragement of the project throughout its many phases.

We are grateful to the Board of Directors, Anna L. Hyer, Robert C. Snider, and Olga Zabludoff of the Department of Audiovisual Instruction of the National Education Association who made the printing of this monograph possible.

Our greatest debt is, of course, to the district superintendents, principals, and classroom teachers for their courtesy and friendly acceptance of our inquisitiveness. The worth of our findings rests on their conscientious replies to our numerous questions.

June 1967 E.P.G.

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1. District Audiovisual Resources in 1961

Broadly speaking, audiovisual instruction in the public schools in the early 1960's was organized around the 16mm projector, the slide-filmstrip projector, the record player, and the tape recorder. These classic tools of the trade were generally available in all but the very smallest school districts. The "newer media" were not so widely distributed. Whereas the typical inventory pattern for the four basic equipment items was one or two *per school,* the usual ownership pattern for overhead projectors, television sets, and language laboratories was one or two *per district,* except in the large metropolitan systems. Even there, the newer media were in relatively short supply. Programed materials, whether in text or machine form, were just beginning to appear in the classroom.

Such was the state of affairs in 1961 when the Bureau of Social Science Research embarked on an extensive study of the use of audiovisual technology in public elementary and secondary education. The National Defense Education Act had been in existence long enough for its purchasing power to be translated into instructional resources. Yet neither the educational community nor the general public was completely convinced of the efficacy of machine-oriented instruction. The new technology was heralded as the answer to the knowledge explosion, vilified as a dehumanizing development threatening to replace the teacher, or dismissed as another educational gimmick. It was a propitious time to update the 1954 National Education Association study of audiovisual education in urban school districts (31).

Our first task was to establish a check point from which to measure future development of audiovisual technology by constructing national estimates of district-owned amounts of eleven items of equipment and five commonly used materials. All estimates are based on figures supplied by a stratified sample of the 35,482 operating school districts in October 1959 (35).

THE SAMPLE FOR PHASE I

The total population of districts was split into two groups for sampling purposes for the first phase of the project:

1. Superintendents in all of the 2,444 school districts enrolling 3,000 or more pupils were asked to participate because of the great variety of teaching situations possible with this number of students.

2. The 33,038 districts with enrollments of less than 3,000 were sampled in different proportions according to size—varying from 50 percent of the systems enrolling 1,200-2,999 pupils to 4 percent of those with fewer than

TABLE 1

Distribution of 1961 Sample and Return Rate by District Size

District Size	*Total Number in Size Group*[a]	*Number in Sample*	*Number of Returns*	*Percent Returns*
Total United States (50 States and D.C.)	35,482	7,236	2,927	40%
75,000 pupils or more	31	31	29	94
25,000-74,999	90	90	75	83
12,000-24,999	236	236	196	83
6,000-11,999	653	653	358	55
3,000- 5,999	1,434	1,434	580	40
1,200- 2,999	3,106	1,459	580	40
600- 1,199	3,192	735	316	43
300- 599	3,591	750	292	39
150- 299	3,411[b]	598	200	33
50- 149	4,737[b]	630	146	23
1- 49	15,001[b]	620	155	25

[a] Source: U.S. Bureau of the Census, October 1959 national census of operating public school districts in the United States.

[b] Over the last several years, reorganization and consolidation of small school districts has reduced considerably the number of districts with fewer than 300 pupils. Therefore, the 501 responses in the three smallest size groups undoubtedly represent a higher proportion of 1961 *operating* districts than the table percentages indicate.

50 students. As school districts become smaller, they become more similar to one another in type of organization. Therefore, an increasingly smaller sample is sufficient to cover all types of teaching situations represented.

Usable returns were received from 2,927 districts, or 40 percent of the total sample of 7,236. The response rate varied directly with size, ranging from a high of 94 percent for districts with 75,000 or more pupils to a low of 23 percent for those with 50 to 149 students. The return rate for each size category is compared with both the number of districts in the sample and the total number of districts in the universe in Table 1.

The near complete response obtained from the three largest size categories was essential for the accuracy of the national estimates. The wide variety of fiscal and educational policies represented among districts with enrollments of 12,000 or more can produce considerable variation in the amount of audiovisual equipment owned by each. The relatively low response rate for systems enrolling 1,200 to 11,999 pupils is of some concern. Districts in this size range may also exhibit considerable variation in educational policy. However, the large number of respondents in each of the three middle size categories assures that errors of estimate for these groups are reasonably dependable. Similarities of organization among districts with fewer than 1,200 pupils make the relatively small return rate from such districts less critical as long as the number of respondents in each enrollment group is large enough to provide a reasonably stable mean for estimation purposes. The 500 responses from the small districts were enough to satisfy this condition.

THE PROBLEM OF NONRESPONSE

Reasons for nonresponse are many and varied and may, or may not, be related to the subject matter under investigation. Some persons object to questionnaires per se. Some do not answer simply because they are not reached.[1] Other busy people intend to answer, but intentions go agley. Whatever the reason for their silence, it is reckless to assume that nonresponding districts do not differ from responding districts in the amount of audiovisual equipment owned. A special study of 354 of the nonrespondent districts with enrollments of 150 to 11,999 was conducted in the fall of 1961 by William E. Alexander. Large school systems were eliminated from this follow-up sample because we continued to solicit participation from the total population of districts with 12,000 or more pupils. This intensive campaign was successful, eventuating in a final large-district response rate of 84 percent. School districts with fewer than 150 students were eliminated from the nonrespondent sample because the little additional accuracy that might have been gained by intensive follow-ups with this group did not justify the cost.

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[1] An intensive study of 354 nonrespondents revealed that 12 percent of them had not received any of the original mailings. It is quite possible that about the same percent (or 880) of the original sample of 7,236 school superintendents may not have received the questionnaire.

Through personal letters, telegrams, or phone calls, we were able to contact all of the 354 superintendents, and 322 (or 91 percent) furnished the requested information. Somewhat to our surprise, and certainly to our gratification, these "late responses" did not differ significantly from the initial responses on any of the variables tested. In each of the six size categories compared, the two groups were remarkably similar in the mean number of district-owned units of eleven media (16mm projectors, slide-filmstrip projectors, television sets, overhead projectors, opaque projectors, tape recorders, record players, radios, language laboratories, sound films, and filmstrips).

Replies from the late respondents were pooled with those from the initial respondents for these items in order to increase the number of cases on which the national estimates were based. Projections for single-purpose filmstrip or slide projectors, records, tape recordings, and 2 x 2 slides were computed from reports from the 2,537 superintendents who completed the longer original version of the questionnaire.[2]

NATIONAL ESTIMATES

The results of all our labor, the national estimates themselves, are given in Table 2. To allow for variations arising from geographical location as well as those related to pupil enrollment, each regional size group was treated independently. As eleven enrollment categories and eight regional designations were used in the study, the national total for each item represents the sum of the estimates for the 88 regional size groups.

With minor reversals, notably for single-purpose slide or filmstrip projectors, the most numerous items of equipment are, understandably, those which have been the basic audiovisual tools for a long time. Television's popularity, at least on an experimental basis, was evidenced by its rank of sixth. The expense of, and limited demand for, language laboratories (where the potential market probably does not exceed the number of senior high schools in a district) makes their rank of eleventh understandable.

[2] Other methods of building an unbiased estimate could be used. For example, Hansen and Hurwitz (19) propose treating respondents as two strata—the initial response stratum and the nonresponse stratum. National totals for nine items of equipment were estimated by the Hansen and Hurwitz formula as well as by the pooled data method described above. In all instances, the percentage differences between the two totals were less than five percent and, except for tape recorders and radio receivers, at or within the margin of error attached to the figures given in Table 2.

TABLE 2

Estimated Amount of Audiovisual Equipment and Materials in U.S. Public School Districts, Spring 1961

		Error of Estimate[a]	
	Total Number	*Number of Units*	*Percent of Total*
EQUIPMENT			
Record player	364,800	± 7,250	2%
Combination slide-filmstrip projector	136,000	± 2,940	2
16mm projector	125,500	± 2,020	2
Radio	108,600	± 3,970	4
Tape recorder	88,200	± 1,930	2
Television set	50,000	± 2,380	5
Opaque projector	39,400	± 1,080	3
Filmstrip (only) projector	33,000	± 2,830	9
Overhead projector	13,900	± 750	5
2 x 2 slide (only) projector	6,400	± 700	11
Language laboratory installation	4,600	± 320	7
MATERIALS			
Filmstrip prints	7,335,700	±582,400	8
Titles	6,253,500[b]		
Disc recordings	3,043,100	±158,000	5
2 x 2 slides	1,286,300	±107,900	8
16mm film prints	741,600	± 47,100	6
Titles	544,700[b]		
Tape recordings	445,800	± 32,300	7

[a] The figures given represent the upper and lower limits of the national estimate at the 95 percent level of confidence.

[b] This figure includes duplicate titles across school districts and does not represent the number of separate titles in use in the public schools.

Filmstrips were far and away the most popular and most numerous district-owned material; the majority of the school systems in all but the very smallest size category had filmstrip libraries, and 65 percent of these libraries contained 100 or more titles. On the other hand, film libraries were concentrated in districts with 6,000 or more pupils, and only systems with 12,000 or more students had enough film titles to supply the majority of the requests from their schools. Nationally, the 741,600 district-owned prints, although representing a sizable investment of capital, supplied only 15 percent of the total demand for educational films. Other commonly used sources were university libraries (25 percent), regional or county libraries (18 percent), and business or trade associations (16 percent). District collections of records, 2 x 2 slides, and tape recordings were highly variable and relatively meager, considering the low unit cost and the amount of attendant equipment available. (Details on ownership of equipment and materials and major film sources by district size are given in Tables A-1 through A-3.)

A further note on the makeup of film and filmstrip libraries may be in order. Estimates for both titles and prints are given in Table 2. The figures for titles, of course, do not represent the number of separate film or filmstrip titles in use, as any two school districts can own a number of the same titles. However, a comparison of the two sets of figures for both materials reveals that school districts typically buy single copies of a title. Nationally, there was a ratio of approximately 1.5 prints per title for sound films and a ratio of approximately 1.2 prints per title for filmstrips. Only those districts with 25,000 or more pupils consistently reported any appreciable number of duplicate prints for either type of material (3:1 for films; 5:1 for filmstrips).

High cost may well explain the lack of duplication in sound film collections, but one must look beyond cost to educational policy and philosophy for an explanation of the lack of duplicate filmstrips. Perhaps media buyers, like some of the rest of us, would rather have a little bit of everything than more of less. We don't know, but a study of film library accession policies might be revealing.

ACCURACY OF ESTIMATES

Although the estimation procedures used give the most probable totals for any item, there is necessarily some error in any estimate. There is always sampling error when national projections are based on sample data. There is, alas, also the possibility of reporting error; i.e., the respondent may under- or overreport the number of units on hand. Standard statistical techniques were used to estimate sampling error. A validation study to estimate reporting error was beyond the scope and resources of this survey. Nonetheless, we can try to assess how such error might affect the validity of the findings.

The error of estimate for each item surveyed is given in Table 2, both in number of units and as a percentage of the total for the item.[3] The size of an error of estimate reflects both the number of districts that report ownership of an item and variability in the number of units owned within any regional size group. Both incidence of ownership and quantity reported differed markedly for the sixteen media surveyed.

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[3] For any region size sample, the variance estimate for the corresponding subpopulation is $N(N-n)s^2n$, where N is the number of districts, n is the number of schools sampled from that district, and s^2 is the sample variance. Thus, the variance for the estimated national totals is the sum of the 88 such values, and the square root of this sum is the standard error. Two times this standard error was used to estimate the 95 percent confidence interval for the

High frequency of ownership and a narrow range in the number of units reported within each enrollment size category are characteristic of the slide-filmstrip projector, 16mm projector, opaque projector, and tape recorder. Hence, the relatively low error of estimate for these four types of equipment. Despite considerable variability in the number of record players reported among districts in the same regional size group, the error of estimate here is also relatively small, reflecting the near universal ownership of these instruments.

Low frequency of ownership and some variability in numbers reported helps account for the size of the error of estimate for television sets and overhead projectors. Although only 29 percent of the districts reported language laboratory installations, the limited range in the number owned (seldom more than two and in no case more than the number of secondary schools in the district) is reflected in the fact that the error of estimate is only 7 percent of the total for that item.

Both low frequency in reported ownership and high variability in absolute numbers combine to influence the size of the error of estimate for single-purpose filmstrip and slide projectors. Lack of homogeneity within a regional size group operates in a similar fashion to produce relatively large errors of estimate for all five materials surveyed. For example, although nearly 80 percent of the districts reported filmstrip collections, these collections could vary from a dozen to several hundred prints within a sample stratum.

In addition to, and independent of, sampling error is error associated with inaccurate reporting. Expensive pieces of equipment—particularly those recently acquired, such as television sets and language laboratories—are highly visible and easy to count. Equipment used for the projection of specialized materials is more likely to be recorded on a central inventory than less expensive, everyday items bought by the PTA or senior class for "their" school. Of course, PTA's buy television sets and all kinds of projectors, but such purchases are either expensive enough or unusual enough to come to the attention of the school superintendent, business manager, or district audiovisual director.

The totals for 16mm, slide-filmstrip, overhead, and opaque projectors should, therefore, be more accurate than those for record players, radios, or tape recorders. Any of the latter items may be supplied by a teacher or parent on a

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national totals. For example, the probability is .95 that the range 355,650 to 372,050 (364,800 ± 7,250) includes the "true" national total for record players. For a discussion of this procedure, see Deming (6, p. 362).

permanent loan basis. If it is difficult to keep track of record players and radios, it is even harder to maintain an accurate count of easily obtainable materials. Following the assumption that expense, relative scarcity, and specialized procurement procedures influence the accuracy of inventory reports, the totals for 16mm prints should be the most accurate; those for disc recordings, the least.

In summary, then, we believe that despite the possibility of an unknown degree of reporting error, the large number of cases in the survey, the lack of any evidence of bias in the reports, and the procedures used minimize the effect of such error on the estimated national totals. Additional indirect evidence of the accuracy of the reports is supplied by subsequent verification of the 1961 figures by a sample of these same districts in 1962 and 1964.

RELATIVE EQUIPMENT INVENTORIES

National totals present the global picture but do not reveal how many teachers, pupils, or schools must share a piece of equipment in each enrollment category. Two indices of *relative* availability were used in this study. The first compares the average amount of equipment per school; the second compares the average number of teachers per unit of equipment.

Two characteristic patterns of distribution emerge from the equipment per school ratios given in Table 3. For the older and generally available media, the ratios are directly related to the size of the school system. For all other media except television, the ratios are fairly constant across size categories.

The flatness of the distribution for overhead projectors may reflect the fact that use of this medium was largely experimental in 1961. A superintendent may buy one or two overheads on a trial basis before deciding whether or not to put one in each of his schools. The consistently low ratios for opaque projectors and single-purpose slide and filmstrip projectors may indicate that these media are primarily district items rather than school items—available from the administration building but not used frequently enough to warrant one in every school. The direct relationship between district size and number of television sets per school makes sense. Metropolitan districts have ready access to a planned sequence of programs, especially in science or language. Such regular course instruction requires more sets per school than does the typical small-district use of television for on-the-spot coverage of important world events.

In contrast, the large districts have fewer language laboratories than one might expect. This phenomenon may be related both to the expense of such installations and the number of schools, more precisely the number of sec-

TABLE 3

Estimated Number of Units of Equipment per School by District Size, Spring 1961

District Size	Number of Units per School										
	Record Player	Slide-Filmstrip Projector	16mm Projector	Radio	Tape Recorder	Television Set	Opaque Projector	Filmstrip (only) Projector	Overhead Projector	2 x 2 Slide Projector	Language Laboratory
Mean Ratio (All Districts)	3.90	1.44	1.41	0.94	1.12	0.49	0.47	0.39	0.19	.09	0.06
75,000 or more	9.20	2.51	2.64	4.05	1.52	1.74	0.64	0.24	0.16	.09	0.06
25,000-74,999	7.23	2.15	2.16	1.87	1.53	1.46	0.63	0.25	0.22	.05	0.07
12,000-24,999	6.22	2.03	2.08	1.33	1.57	0.68	0.61	0.38	0.31	.09	0.05
6,000-11,999	5.63	1.85	1.78	1.03	1.46	0.70	0.64	0.44	0.25	.07	0.05
3,000- 5,999	4.89	1.78	1.73	1.10	1.49	0.62	0.58	0.43	0.23	.11	0.06
1,200- 2,999	4.11	1.53	1.55	0.89	1.24	0.52	0.57	0.58	0.22	.11	0.07
600- 1,199	3.28	1.35	1.27	0.81	1.04	0.36	0.46	0.33	0.16	.10	0.06
300- 599	2.53	1.08	1.04	0.81	0.85	0.23	0.36	0.33	0.14	.20	0.03
150- 299	1.80	0.89	0.86	0.77	0.63	0.26	0.26	0.25	0.08	.05	0.04
50- 149	1.29	0.60	0.69	0.52	0.35	0.18	0.17	0.27	0.04	.02	0.01
1- 49	0.49	0.29	0.15	0.23	0.05	0.02	0.01	0.12	0.01	—	—

ondary schools, in a system. Districts with 6,000 or fewer students seldom have more than one high school; *the* language laboratory can be put in *the* high school. Districts with more than 6,000 students may have 2, 10, or 100 high schools and may not be able to afford a language laboratory for every high school in the system. Thus, a dilemma is posed for the administrator. Shall he install one laboratory on an experimental basis and hope to add others year by year? If he so decides, in which high school will it be installed? Is it fairer (or more politically feasible) to wait until he can supply all of his high schools at the same time? The instructional and political determinants of how any educational resource is distributed throughout the components of the system is a fascinating area for further study.

While audiovisual equipment is bought by districts and housed in schools, it is used by *teachers*. Teacher-equipment ratios were computed for all items of equipment except the language laboratory. The latter is a specialized installation used almost exclusively by foreign language and English teachers; hence, a ratio based on the total number of teachers in a district would be meaningless. The ratios shown in Table 4 support the inferences drawn from the school index of relative availability. There was amazingly little variation in teacher-equipment ratios for all items where the number of units per school varies directly with school size. Where the per school ratios are relatively flat (single-purpose filmstrip or slide projectors and overhead projectors), teachers in smaller districts are in a relatively advantageous position. The most extreme ratios are found in either the very large systems (with 75,000 or more pupils) or the very small ones (with fewer than 50 students).

These findings highlight the truism that equipment comes in whole units. A superintendent either buys a projector or he doesn't; he cannot buy half a projector. Big districts have more pieces of equipment, but they also have more schools and more teachers, so that the larger absolute numbers do not necessarily give them a relative advantage. For example, a teacher in a small district with one overhead projector is more likely to have access to the machine than a teacher in a district five times as large with four overheads. The lack of comparable availability can be overcome only when large districts can afford routinely to adjust equipment inventories to faculty size.

USE OF NDEA FUNDS

The National Defense Education Act of 1958 provided federal funds on a matching basis to help school districts buy equipment for programs in science, mathematics, and foreign language. Here, too, there were characteristic differences in behavior among large and small school systems. Participation in NDEA projects was directly associated with district size—from a low of 22

TABLE 4

Estimated Number of Teachers per Unit of Equipment by District Size, Spring 1961

	Number of Teachers per Unit									
District Size	*Record Player*	*Slide-Filmstrip Projector*	*16mm Projector*	*Radio*	*Tape Recorder*	*Television Set*	*Opaque Projector*	*Filmstrip (only) Projector*	*Overhead Projector*	*2 x 2 Slide Projector*
Mean Number (All Districts)	4	11	12	14	17	30	38	45	107	232
75,000 or more	4	10	11	7	20	20	52	173	190	835
25,000-74,999	4	12	12	15	18	18	42	109	126	443
12,000-24,999	4	11	12	17	16	26	39	61	87	271
6,000-11,999	4	11	13	20	16	34	35	50	94	290
3,000- 5,999	4	12	13	19	17	34	38	42	107	238
1,200- 2,999	5	12	13	19	17	38	34	31	101	156
600- 1,199	5	12	12	15	17	42	35	40	102	180
300- 599	5	10	11	11	14	58	31	40	86	125
150- 299	5	8	9	10	13	36	27	41	90	132
50- 149	3	7	6	7	11	33	29	15	89	94
1- 49	2	4	9	4	22	154	216	8	140	—

percent of the 254 districts with fewer than 150 students to 93 percent of the 96 districts with enrollments of 25,000 or more.

Approximately two-thirds of the NDEA project money received was used for microscopes, torsos, mathematical models, reference books, and other laboratory equipment and furniture not germane to this survey. However, one-third of the money was spent for audiovisual media, especially equipment for language programs. Twenty-five percent of the districts bought language laboratory equipment; 27 percent bought tape recorders; 15 percent bought record players. The other most frequently purchased items were 16mm projectors (25 percent), opaque projectors (15 percent), filmstrips (16 percent), and overhead projectors (14 percent). Only 7 percent of the respondents bought television sets.

Again, national averages mask characteristic differences in buying patterns for districts of varying size. Purchases of language laboratories and overhead projectors were concentrated in school systems with 1,200 or more pupils. Small systems were more likely to use their NDEA money for 16mm projectors, filmstrip or slide projectors, and opaque projectors. Purchases of tape recorders, record players, and filmstrips were quite evenly distributed across district size. Purchases of television sets were made essentially by districts with 25,000 or more pupils.

Whatever the pros and cons of federal assistance to education, the enactment of such legislation, at least in the guise of the National Defense Education Act, has worked to accentuate differences in educational programs offered by large and small school systems. Large districts are more ready to accept federal aid. Perhaps they are less sensitive about the possible threat of federal control. Perhaps they can find the necessary matching funds more easily. Perhaps it is as simple a matter as having enough staff available to shepherd an application through the bureaucratic maze. All three concerns were frequent reasons for nonparticipation in NDEA projects among the small-district respondents in our study.

Once federal monies are applied for and received, they are used more frequently for innovative programs (electronic language training) in large districts and more often for standard audiovisual tools (the 16mm projector) in smaller ones.

ADDITIONAL EQUIPMENT AND MATERIALS NEEDED

No matter how extensive his present resources might be, the school administrator is seldom satisfied. Our respondents were no exception to the general rule that there is always room for improvement. Each superintendent was asked to "estimate the number of additional units of equipment and materials needed to serve your present teaching program and enrollment." The question was phrased in this manner in order to obtain a report of realistic need rather than optimum desire. The reasonableness of the replies suggests that school superintendents answered the question in this light.

National estimates of the number of additional items needed are given in Table 5. These estimates were built from the replies of the 2,537 initial respondents (those who filled out the complete questionnaire) in the same manner as the national totals discussed previously; that is, the total amount needed in a regional size group was estimated from the mean needs of the respondents in that group.

The most striking observation about the estimates in Table 5 is the high

TABLE 5

Estimated Additional Audiovisual Equipment and Materials Needed for Present Programs and Enrollment U.S. Public School Districts, 1961

	Present Amount	*Number Needed*	*Percent Increase*
EQUIPMENT			
Record player	364,800	62,100	17%
Combination slide-filmstrip projector	136,000	34,500	25
16mm projector	125,500	25,700	20
Radio	108,600	31,800	29
Tape recorder	88,200	34,700	39
Television set	50,000	49,600	99
Opaque projector	39,400	23,000	58
Filmstrip (only) projector	33,000	11,300	34
Overhead projector	13,900	29,400	212
2 x 2 slide (only) projector	6,400	6,400	100
Language laboratory installation	4,600	8,500	185
MATERIALS			
Filmstrip prints	7,335,700	2,101,000	29
Titles	6,253,500[a]	1,411,700	23
Disc recordings	3,043,100	780,900	26
2 x 2 slides	1,286,300	718,800	56
16mm film prints	741,600	495,700	67
Titles	544,700[a]	340,200	62
Tape recordings	445,800	380,900	85

[a] This figure includes duplicate titles across school districts and does not represent the number of separate titles in use in the public schools.

expressed need for overhead projectors, language laboratories, 2 x 2 slide projectors, and television sets. The desire for more of these four media was high in all enrollment size categories, with two exceptions. Administrators in very small districts did not find the language laboratory a practical investment; they would rather have more tape recorders. Respondents in very large districts, which already owned 9,700 (or 19 percent) of the television sets, reported that a 25 percent increase in this item would enable them to serve their present teaching needs.

The high reported demand for tape recordings is consistent with the increasing use of tapes in foreign language instruction. A desire to own more sound films may indicate a dissatisfaction with present procurement procedures. The problem of getting the right film to the right place at the right time constantly plagues the educator. Ordering and scheduling stand first among the major obstacles to effective use of audiovisual materials reported by the superintendents in our survey. Cooperative film libraries and other rental sources have provided the public schools with a broad selection of film titles. However, these outside agencies cannot provide instant service. The largest desired increases in film resources (excluding the very small districts that have so few films that any increase is a large one) are expressed by administrators in systems with 1,200 to 11,999 pupils. Such districts have few enough schools to make rapid local distribution practical and large enough enrollments to make a film library with a reasonable variety of titles feasible.

OTHER STUDIES OF AUDIOVISUAL RESOURCES

The research reported here is set in a tradition of census-type studies of instructional technology dating from Koon and Noble's survey in 1936 (25). Because of its early and continued prominence, most of the other benchmark studies have concentrated on photographic equipment (for examples, see [10, 11, 12, 17, 18]), except for the National Education Association sponsored studies in 1946, 1954, and 1962 which were concerned with a broad range of equipment comparable to our own list of items.

Although direct comparisons between the NEA surveys of urban school districts in 1946 and 1954 and this one are not possible because of the differences in sample base, some general conclusions about trends can be provided by relating the three sets of findings. With the exception of 2 x 2 slide projectors and radios, the relative amount of equipment available (as measured by the number of units per 10,000 students) had increased markedly since 1954. Whereas the number of slide-filmstrip projectors, 16mm projectors, television sets, opaque projectors, and overhead projectors had increased respectively by 17, 10, 12, 4, and 3 units per 10,000 students in the seven-year period from

1954 to 1961, similarly constructed equipment-student ratios for slide projectors and radios had declined by 8 and 5 units respectively.

The apparent drop in slide projector inventories may be the result of the popularity of the combination slide-filmstrip projector. The lack of expansion of radio inventories is probably due to the advent of television. Both the relative utility of dual-purpose and single-purpose equipment and the question of interchangeability and possible competition among media deserve further study.

In addition to the historic NEA surveys, two recent inventory estimates are available against which to check our findings. One by James D. Finn, Donald G. Perrin, and Lee E. Campion for the NEA Technological Development Project (8) traces the growth in instructional technology from 1930 to 1961. The other, the third interim report for the Society of Motion Picture and Television Engineers, by Thomas W. Hope (21), reports yearly statistics on the production and sale of 16mm projectors and nontheatrical films for January 1962. Both studies estimate the proportion of yearly sales which go to the public schools. Total cumulative sales are reduced to inventory data by means of an obsolescence factor to account for equipment retired from use.

Estimated amounts of nine items of equipment developed by the NEA Technological Development Project are juxtaposed with the findings from this survey in Table 6. The BSSR figures for slide-filmstrip, single-purpose filmstrip,

TABLE 6

Comparison of TDP and BSSR Estimates of Amount of Audiovisual Equipment in U.S. Public School Districts, 1960 and 1961

	Estimated Amount (in Thousands)		
Equipment	*TDP*[a] *Dec. 1960*	*BSSR Spring 1961*	*TDP*[a] *Dec. 1961*
Record player	286	365	323
Slide-filmstrip projector (all kinds)	156	175	176
16mm projector	130	126	137
Radio	104	109	105
Tape recorder	67	88	88
Television set	45	50	56
Opaque projector	36	39	41
Overhead projector	17	14	20
Language laboratory	6	5	8

[a] Source: Finn, James D.; Perrin, Donald G.; and Campion, Lee E. *Studies in the Growth of Instructional Technology, 1: Audiovisual Instrumentation for Instruction in the Public Schools, 1930-1960.* Occasional Paper No. 6. Washington, D. C.: NEA Technological Development Project, 1962. Table XX, p. 105.

and 2 x 2 slide projectors were combined in the table in order to provide a direct comparison with the TDP estimate, which was for all types of slide-filmstrip projectors. Three sets of figures are presented in Table 6 because the TDP figures were for the end of a calendar year whereas our data were gathered essentially during the spring of 1961. The two estimation methods yield strikingly similar results for five of the nine items compared.

The difference in the estimates for record players is not surprising; they are relatively cheap, readily available, easily moved, and hard to keep track of. Perhaps superintendents overestimated the number of school-owned machines for our survey; or perhaps the TDP estimates for earlier years, when less accurate sales data were available, provide too low a base figure upon which to superimpose the accelerated growth in the purchase of record players since 1952.

The Technological Development Project growth charts indicate that the number of overhead projectors in the schools had almost doubled, while the number of language laboratories had more than tripled between 1959 and 1961. We agree that growth patterns for these two media are explosive, but our findings suggest that public school districts had not yet acquired as much of these two pieces of equipment as the TDP growth trends predicted they should. But 1961 was not yet over. If school administrators were able to purchase even one-fourth of the needed language laboratories and overhead projectors during the summer (when most buying is done), the national totals based on our estimates for the two media would increase to 7,300 and 21,000 respectively by the end of calendar 1961—very close to the TDP projections.

The Hope report for the SMPTE estimated that there were 197,700 16mm sound projectors in public elementary and secondary schools on January 1, 1962 (21, Table VI, p. 141). The Finn-Perrin-Campion estimate was 137,700. Both estimates were considerably higher than our own of 125,500, even allowing for the time difference in report period. Three possible explanations for higher inventory estimates derived from sales figures suggest themselves: Too large a proportion of total sales may be attributed to the public schools; the useful life of a projector may be overestimated; or the base figures for different types of schools developed from previous studies may be too high.

Until more detailed sales records are available, any investigator must estimate the proportion of yearly sales to the public schools, or how this figure may change from year to year. Our data suggest that both surveys may have overestimated the impact of NDEA funds on school projector purchases.

Similarly, until more is known about equipment replacement policies, any adjustment of cumulative figures for obsolescence is only an educated guess. Finn, Perrin, and Campion chose a ten-year obsolescence factor as most reasonable. They noted that a number of the large city systems trade in their projectors after five years of service but argued that longer usage and the purchase of some second-hand equipment by small districts should maintain an average projector life of about ten years. Preliminary findings from the second phase of our project suggest that school districts of all sizes keep their equipment in good repair and up to date, indicating a projector life of less than ten years.

Previous surveys, notably those by the NEA in 1946 and 1954, have reported equipment inventories for districts with 1,000 or more pupils. Such information is essential as the larger school systems have most of the equipment and the most extensive audiovisual programs. However, national projections tied too closely to a sample of large districts would overestimate the number of projectors in small school systems. For example, the average number of 16mm projectors per school in our sample varies from 0.2 in districts with fewer than 50 students to 2.6 in the 31 large metropolitan systems.

Another problem common to all inventory studies is that it is virtually impossible to say how equipment is divided between elementary and secondary schools. Ideally, the equipment used in a building should be housed in that building; practically, equipment is housed where there is storage space—often behind the high school stage in the small district. The possibility that both elementary and secondary teachers may use the same piece of equipment suggests the danger of duplication in any inventory count based on sales data. If this line of reasoning is valid, there may be some overlap in Hope's estimate of 125,000 projectors in public elementary schools and 72,700 projectors in public secondary schools. If so, then the number of *individual* projectors available may well be less than the 197,700 total obtained by adding these two figures.

The four studies discussed above were made from different source data and with purposes other than our own. The earlier NEA research describes audiovisual programs in urban districts. The Technological Development Project assesses growth in instructional technology since 1930. The SMPTE reports analyze yearly trends in production and sales. The BSSR survey estimates the amount of eleven items of audiovisual equipment available for use in public elementary and secondary education at one point in time—the spring of 1961. All such studies contribute to knowledge about the development of audiovisual technology.

OUTLOOK FOR THE FUTURE

Each superintendent was asked to project his plans for media use for the two-year period from 1961 to 1963. Projected plans were consistent with both estimates of additional equipment needed and NDEA purchases.

Language training is clearly the most promising field for audiovisual technology in the near future. As shown in Table 7, 30 percent of the administrators planned to introduce language laboratories, and another 15 percent intended to make greater use of the laboratories they already had. In addition, 30 percent planned to put greater emphasis on records and tapes in the next two years.

TABLE 7

Plans for Use of Audiovisual Media for 1961-1963

	Percent of Superintendents in Planning Category[a]				
Media	*Continue Present Use*	*Plan To Try*	*Emphasize Use*	*No Plan To Try*	*No Answer*
16mm films	68%	2%	21%	2%	7%
Filmstrips	63	1	30	1	6
Records and tapes	55	4	30	3	8
Radio	58	3	9	17	15
Overhead and opaque	43	10	29	6	11
Broadcast television	20	18	10	33	19
Language laboratory	12	30	15	21	21
Teaching machine	3	30	2	37	29
Closed-circuit television	1	11	2	58	28

[a] Only the initial respondents were used for this analysis; therefore, the total number of districts replying for all items is 2,537.

If current intentions are carried out, there should be increased use of the overhead, the opaque, and the filmstrip projector. Least interest was shown in expanding television instruction, particularly in the form of closed-circuit TV. This lack of interest becomes even more striking if one can assume that the "no answers" are like the "no plans to try." Plans for programed learning (teaching machines) are tri-modal. While 30 percent of the respondents planned to introduce this method of teaching, another 37 percent definitely had no such intention, and 29 percent left the question blank.

Finn, Perrin, and Campion concluded that instructional technology had not advanced far enough by 1961 to justify the thesis that the educational culture was ready for "take-off into a high-order, high-energy culture" (8, pp. 70-72). The three researchers were optimistic, however, in their opinion that if certain trends were pushed more rapidly, the educational enterprise would be in a position to achieve technological balance with other major sectors of the society. Balance could be achieved if teacher-equipment ratios for seven items—the 16mm (or 8mm) projector, slide-filmstrip projector, record player, radio, tape recorder, overhead projector, and television set—could be reduced to 5:1. The equipment buildup represented by this average ratio would provide the social overhead capital necessary for a technological revolution in education.

Prospects for such an optimum ratio for all seven items were uncertain in 1961. Teacher-equipment ratios for record players were already 4:1, and the high interest in language instruction could produce a similar ratio for tape recorders, at least in the smaller districts. Expressed inventory needs for 16mm projectors, radios, and slide-filmstrip projectors suggest that ratios for these items might stabilize at about 10:1 as school boards choose to put more of their resources into newer developments, particularly the overhead projector.

The outlook for complex systems of instructional technology, such as educational television, the language laboratory, and the teaching machine, was uneven. Fewer than half of the respondents (47 percent) were ready to commit themselves to regular classroom use of television during the school years 1961-64. The future of programed materials, especially that of the teaching machine, was even more uncertain. In 1961, the majority of the school superintendents were not yet convinced of the value of this pedagogical technique. The outlook for electronic language instruction was the brightest of the three. Almost 29 percent of the sample districts already had some type of language laboratory;[4] another 30 percent hoped to install one in the near future.

In general, then, the first part of our story ends where it began. Although educators will acquire more overhead projectors and continue to experiment with educational television, programed learning, and other new media as they are developed, audiovisual technology should continue to be organized around the traditional tools of the trade—the 16mm projector, the record player, the slide-filmstrip projector, and, increasingly, the tape recorder.

[4] Not all of these installations are complete laboratories in the sense that the student can listen, speak, record, play back, compare, and rerecord, but they are equipment systems designed for a specific instructional purpose.

2. School Resources in 1962

The scene of our story shifts now from the district to the school. The second phase of the project, conducted in 1962, examines three basic parameters of audiovisual instruction: distribution of resources, teacher use of these resources, and the climate of opinion in which this use takes place. Emphasis throughout is on how many of whom have, do, or say what. Hopefully, the data will stimulate discussion and further research on the "how," the "why," and the "ought."

The tale we unfold may be disquieting to some, challenging to others. The audiovisual field in 1962 appeared to be much nearer to a solution to the technical problem of providing adequate equipment resources than it was to a solution to the instructional problem of providing appropriate information and materials for a variety of subject specialists.

THE SAMPLE FOR PHASE II

The information upon which the description of school programs is based was obtained from questionnaire responses from 517 principals, 91 audiovisual coordinators, and 10,360 classroom teachers in 247 districts in the spring of 1962. In order to build on data from the Phase I survey of district-level programs, the population of districts from which the Phase II sample schools were drawn was limited to systems that had participated in the first part of the study. The base population was further limited to districts with enrollments between 150 and 24,999 pupils. The upper size limit was set in order to minimize the problem of sampling schools within a district; the lower size

Prospects for such an optimum ratio for all seven items were uncertain in 1961. Teacher-equipment ratios for record players were already 4:1, and the high interest in language instruction could produce a similar ratio for tape recorders, at least in the smaller districts. Expressed inventory needs for 16mm projectors, radios, and slide-filmstrip projectors suggest that ratios for these items might stabilize at about 10:1 as school boards choose to put more of their resources into newer developments, particularly the overhead projector.

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[4] Not all of these installations are complete laboratories in the sense that the student can listen, speak, record, play back, compare, and rerecord, but they are equipment systems designed for a specific instructional purpose.

limit was set so that all of the sample systems would be large enough to have a variety of audiovisual resources.

Application of the enrollment size limitation reduced the eligible district population from 2,927 (the total number of Phase I respondents) to 2,500 (respondent districts with enrollments of 150 to 24,999 pupils). A 10 percent random selection of this group, stratified by region and size, yielded a first-stage sample of 253 districts.

The second step in the procedure was to draw a random sample of schools from each of the 253 districts. To insure coverage of all instructional levels within a district, elementary and secondary schools were sampled separately. As the study design called for the participation of *all* of the full-time faculty in a school, a different sampling ratio was used in large and small districts in order not to overload the survey with teachers from large systems. This two-step procedure produced a final sample of 323 elementary schools and 219 secondary schools distributed as shown in Table 8.

Response to the survey was very high for every district size category and every type of respondent. Usable questionnaires were returned by:

1. schools in 98 percent of the 253 sample districts,
2. 95 percent of the 542 principals,
3. 89 percent of the 11,920 full-time teachers in the 517 responding schools,[1]
4. 81 percent of the 328 teachers designated as audiovisual coordinators by their principals.

TABLE 8

Distribution of 1962 School Sample and Returns by District Size

	Elementary Schools			*Secondary Schools*		
District Size	*Sampling Ratio*	*Number in Sample*	*Number of Returns*	*Sampling Ratio*	*Number in Sample*	*Number of Returns*
Total		323	308		219	209
12,000-24,999	1:6	41	40	1:3	25	25
6,000-11,999	1:6	71	68	1:3	34	33
3,000- 5,999	1:6	74	70	1:3	50	47
1,200- 2,999	1:3	72	70	1:3	62	58
600- 1,199	1:3	27	26	1:2	27	27
300- 599	1:2	25	23	1:2	16	15
150- 299	1:1	13	11	1:1	5	4

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[1] The maximum number of possible teacher respondents was the total of all full-time teachers in the responding schools at the time of the first regular report date for the fall term 1961-62.

SCHOOL-BASED EQUIPMENT

In the best of all audiovisual worlds, the classroom is a laboratory in which all of the technological devices the teacher can use profitably are at his fingertips. In the real world, unfortunately, he must wheel the equipment he wants to use down the hall or, worse, order it from the administration building. As shown in Table 9, the workhorses of audiovisual instruction (the record player, 16mm projector, and slide-filmstrip projector) were available in 95 percent of the elementary schools and 98 percent of the secondary schools. Radios were equally available at both instructional levels.[2] All five of the other media were found more often in the secondary schools.

The differential stocking pattern for audiovisual equipment in the two types of schools deserves further comment. It may be that certain media, notably the tape recorder and overhead projector, are thought to be more suitable for instruction at the secondary level. There may be a presumption that secondary teachers are more likely to use a greater variety of equipment—a presumption not supported by this study. Or it may be simply a matter of limited storage space in the elementary school. Whatever the reasons for it, the lack of a wide variety of equipment makes it more difficult for the elementary teacher to become acquainted with the less traditional technological tools. Even when language laboratories are excluded from the analysis, only 6 percent of

TABLE 9

Incidence of Equipment Items in School Building, 1962
for Both Types of Schools
(Equipment listed in order of overall availability)

	Percent of Schools Reporting Item	
Type of Equipment	*Elementary*	*Secondary*
Number of Schools	308	209
Record player	98%	100%
16mm projector	95	100
Slide-filmstrip projector	95	98
Tape recorder	76	99
Radio	74	76
Opaque projector	61	76
Television set	40	52
Overhead projector	20	56
Language laboratory	4	42

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[2] Although about 20 percent of the sample schools did not report radios on their inventories, it should be noted that radios were easily available if desired.

the elementary schools had all of the other eight items of equipment as compared with 28 percent of the secondary schools.

The greatest discrepancy was noted for the language laboratory, which has been identified essentially with foreign language instruction, not a standard part of the elementary curriculum. Only 32 elementary principals reported any special facilities for language training, only two of which were complete laboratories. However, provisions for electronic language training were not generally available in the secondary schools, even in large districts. (See Table A-4 for distribution of installations by district size.)

These findings do not imply that the public schools did not teach foreign languages; 92 percent of the secondary schools included one or more foreign languages in the curriculum. Nevertheless, in 1962, only 42 percent were providing this instruction through any type of language laboratory.

Because of the wide range of learning systems that are labeled "language laboratory," each principal was asked to describe in some detail any special facilities he had for language instruction.

Available facilities were divided about equally between complete language laboratories and partial installations or listening stations. Forty-eight principals had a teacher console serving from 3 to 40 students; 49 reported that they provided group language training by means of one or more tape recorders or record players with jacks for multiple headsets or earphones. Although these latter installations were primarily designed for listening, several made routine use of records or tapes which encourage the student to respond orally. A few of the listening stations used dual-track tape on which the student could record his responses and compare them with a prerecorded model.

TEACHER-EQUIPMENT RATIOS

Adequacy of equipment resources can be judged not only by whether or not an item is readily available but also by how many persons it serves. Teacher-equipment ratios for eight items of equipment are given in Table 10. These computations were done only with respondents in schools which had the equipment in order not to inflate the figure by including teachers from schools which did not have the item in question.

Several points stand out when we look at the number of teachers served by each piece of school-based equipment. Elementary schools have a more restricted variety of equipment resources, but their teachers are relatively better supplied with whatever equipment is available, except, perhaps, for the tape recorder.

The consistency of teacher-equipment ratios for the four traditional items in the high school and the comparability of the ratios for 16mm projectors

TABLE 10

Number of Teachers per Unit of School-Based Equipment, 1962 for Both Types of Schools

	Number of Teachers per Unit of Equipment[a]	
Type of Equipment	*Elementary*	*Secondary*
Record player	2	9
16mm projector	11	12
Slide-filmstrip projector	8	12
Tape recorder	12	11
Radio	7	19
Opaque projector	16	30
Television set	8	22
Overhead projector	18	37

[a] Ratios were computed only for respondents who had access to the equipment. Therefore, the number of schools and teachers varies for each entry in the table.

and tape recorders between the two instructional levels may provide some insight into evolving quantitative standards. Administrators appear to be working with a standard of one unit of "basic" equipment for every eight to twelve teachers, with a heavier concentration of record players and television sets where elementary subjects are taught. These equipment standards compare favorably with those cited by Hyer in her 1961 article (23) but are too low to meet the 1965 DAVI guidelines (7).

The relatively high teacher-equipment ratios for opaque and overhead projectors in both types of schools derive from the fact that no school in the sample, no matter how large, had more than four of either item. (See Tables A-5 and A-6 for the distribution of amount of equipment for elementary and secondary schools.) Although most striking for these two media, the inability to completely adjust inventories to faculty size[3] places teachers in larger schools in a relatively disadvantageous position with respect to all eight items of equipment (see Tables A-7 and A-8). The consistency of the ratios across district size categories indicates that this adjustment problem plagues every superintendent regardless of the number of schools in his district (cf. Table 4, p. 27).

[3] Schools were categorized by faculty size rather than pupil enrollment because the emphasis was on resources available to the teacher and teacher use, not pupil exposure. The schools are grouped as follows:

Very large	51-150 teachers
Large	31- 50 teachers
Medium	21- 30 teachers
Small	11- 20 teachers
Very Small	1- 10 teachers

MATERIALS COLLECTIONS

A district superintendent must consider many factors of curriculum content, storage facilities, logistics, and economics in deciding which materials will be housed in the school building, which distributed from the central office, and which rented or borrowed from outside sources. As noted in Chapter 1, the outstanding characteristic of the materials collections was their variability—both as to type and amount of material reported. There was considerable variation not only among districts in different size categories but among those with similar pupil enrollments.

Although minimum quantitative standards for materials are difficult to establish, Hass's 1958 yardstick for California counties with enrollments up to 30,000 pupils can serve as a point of departure for judging the adequacy of the collections in the sample (20). As his standards are geared to curriculum needs rather than pupil enrollments, they are approximately the same for all of the size categories encompassed by this survey. According to Hass, a school district should have 750-1,000 16mm film titles, 2,000 filmstrip titles, 1,200 records, 200 tape recordings, and 100 2 x 2 slide sets.[4]

Examination of the district figures in Table 11 shows that only a very few of the sample districts approached these materials standards. This finding is noteworthy in view of the fact that the majority of these same districts had achieved or surpassed 1961 minimum standards for most items of equipment.

Sound films were obtained primarily from outside the school district. Ap-

TABLE 11

Size of Materials Collections in School District, 1961
for All District Sizes
(N = 247)

	Percent of Districts Reporting					
Type of Material	0	1-99	100-499	500-999	1,000+[a]	*Unknown*
16mm film titles	*58%*	*21%*	*16%*	*4%*	*< 1%*	*< 1%*
Filmstrip titles	*13*	*14*	*30*	*18*	*23*	*2*
Records	*33*	*17*	*17*	*8*	*12*	*13*
Tape recordings	*44*	*32*	*11*	*< 1*	*< 1*	*12*
2 x 2 slides	*61*	*6*	*15*	*4*	*2*	*12*

[a] Maximum reported inventories were 7,500 filmstrip titles, 15,000 records, and 2,500 2 x 2 slides.

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[4] Quantitative materials guidelines have recently been updated and adopted by DAVI (7). A joint committee representing the Department of Audiovisual Instruction and the American Association of School Librarians is preparing a joint publication, *Standards for School Media Programs*, which will succeed the 1960 American Library Association publication, *Standards for School Library Programs*.

proximately 50 percent of all film bookings came from outside educational sources—regional libraries, universities, or state departments of education. An additional 34 percent of the films used in secondary instruction were acquired directly from business organizations or rented from commercial agencies. Reliance on the district library increased as the district became larger and had more film titles. However, although the largest districts (with 12,000 to 25,000 pupils) supplied the majority of the films used in their elementary schools, they provided only 30 percent of the films ordered by their secondary teachers (see Tables A-9 and A-10). Apparently, even a library of several hundred titles cannot provide the variety of specialized films required to meet secondary curriculum needs.[5]

Filmstrips and records were available in the majority of the individual buildings. Tapes and 2 x 2 slides were less frequently found in the school library. School collections of all four media were highly variable. Large and small schools in large and small districts reported collections of over 1,000 items or no materials at all. Consistent with equipment ratios, record and filmstrip libraries tended to be larger in elementary schools, whereas tape and slide libraries were larger in secondary schools (see Tables A-11 and A-12).

The lack of tape and slide collections at both the district and school level is interesting in view of the finding that 84 percent of the 517 schools had one or more tape recorders in the building, and 96 percent had some form of slide projector. It appears that school districts have provided the equipment but not the materials to be used with this equipment.

Nor was the teacher a significant source of tapes or slides. While 54 percent of the respondents, primarily elementary teachers, used their own materials, these were most often personal records; fewer than 20 percent used their own slides or tapes. Very few materials of any kind were prepared by the teacher regardless of the grade or subject he taught.

PRODUCTION FACILITIES

One plausible explanation for lack of teacher-produced materials is the lack of school resources for making them. Other than the tape recorder, available in almost all of the schools, and darkroom facilities reported in 55 percent of the high schools, there were minimal facilities for producing audiovisual materials in the individual school buildings. Even so, the tape recorder was not always thought of as a vehicle for *producing* materials; 84 percent of the schools had tape recorders, but only 50 percent of the principals reported these machines as production facilities.

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[5] In 1961, districts with 12,000—24,999 pupils had an average of approximately 400 titles in their film libraries.

Again, there was a greater variety of facilities in the secondary schools. One interesting finding is that secondary principals in districts with 12,000 to 25,000 pupils as well as those in districts with 150 to 1,200 students reported fewer production facilities than did their counterparts in the in-between size categories (see Tables A-13 and A-14). Why this curvilinear relationship? Small districts probably find such facilities too expensive to maintain; they can do better if they obtain their materials from outside sources. Conversely, large districts may find it more efficient to centralize local production facilities in one place rather than to duplicate them in each high school, although efficiency may be bought at the price of availability. The question of centralization versus decentralization is not as acute in middle size districts where there is typically only one or two high schools in the system.

FACULTY, STUDENT, AND PTA PARTICIPATION

Teachers may recommend media purchases or advise others in the use of these resources. Students may assist in many ways—delivering, operating, cataloguing, or repairing. A PTA may buttress its concern for audiovisual instruction by purchasing equipment and materials.

Only 28 percent of the principals reported that they had a faculty committee specifically set up to assist in the audiovisual program. Even in the largest districts, fewer than half of the schools had a formal mechanism for teacher participation. However, two-thirds of the teachers made suggestions for new acquisitions, and 90 percent of those who did so reported that their suggestions frequently led to the purchase or rental of the desired media.

Successful as these informal requests may have been, almost 25 percent of the teachers did not make suggestions, and another 10 percent felt that they had no opportunity to do so. A formal procedure might involve more of the faculty in the acquisition of materials and in setting guidelines for their use. Such a procedure may be especially useful in the large high school where sheer numbers may inhibit informal interaction across departmental lines.

PTA help was most characteristic at the elementary level, where parents are traditionally more actively involved in school affairs (53 percent as compared with 22 percent in secondary schools). Whether parental involvement stimulates or deters district purchases of new equipment is an interesting question for study.

The most popular PTA-contributed items were record players, tape recorders, and television sets, particularly the record player, which was bought by 16 percent of the parent groups. Materials were less popular; only 5 percent of the PTA's bought either filmstrips or records. The emphasis on equipment is worth pondering. Parent groups have traditionally spent thousands of dollars on library materials, and the principals in the sample complained about a lack of good audiovisual materials. Can it be that a book or a piece of projection equipment is more satisfying to the donor than a set of filmstrips or records?

Students were more frequent participants in the audiovisual program than either their teachers or their parents. Active student participation was reported by 86 percent of the secondary schools and 60 percent of the elementary schools. If this activity produces a positive attitude toward audiovisual technology, it bodes well for the future.

INFORMATION RESOURCES

Teachers obtain information about audiovisual media from a variety of sources, the most nearly universal of which is the school catalogue. (Eighty-one percent of the teachers reported that their school district prepared a catalogue of available materials.) Other common sources are advertising literature, audiovisual courses, fellow teachers, and professional journals. Teacher preferences for each information resource are given in Table 12.

District catalogues were most favorably received in the elementary schools where they were most frequently distributed directly to the teacher. Secondary teachers, particularly those in applied arts and science, found material supplied by audiovisual distributors and manufacturers somewhat more valuable than that furnished by their schools. Professional journals were most valuable to teachers in fine and applied arts and language. Mathematics teachers were more likely than any other group of respondents to report that none of the usual information sources were satisfactory. Formal courses and fellow teachers were infrequently chosen by all groups. Apparently, school districts have been more successful in compiling useful information about materials suitable for the elementary grades than they have been in compiling and distributing information tailored to the more specialized interests of the secondary teacher.

PERSONNEL RESOURCES • AUDIOVISUAL COORDINATION

Very few school districts outside of the large metropolitan or suburban systems have a full-time audiovisual director. District coordination is handled as a secondary assignment by superintendents, curriculum supervisors, other district-level administrative personnel, or individual building principals. So, too, with audiovisual duties *within* the school. None of the elementary schools and only nine of the secondary schools had a building staff member whose major job title was audiovisual coordinator or its equivalent, and only four of these nine spent full time at the task. All four were employed by wealthy single high school suburban districts.

The name and major job title of the person who functioned as audiovisual coordinator for his school were obtained from the principal. Each person so named was invited to fill out a short questionnaire describing the tasks he performed, the time spent in audiovisual duties, any special training he had had, and his opinions about the use of audiovisual instructional materials in his school. The distribution of major responsibilities is given in Table 13.

TABLE 12

Most Valuable Source of Information About Audiovisual Media

A. *Elementary Teachers by Grade Taught*

		Percent of Teachers Who Obtain Information from					
Grade Taught	*Number of Teachers*	*School Catalog*	*Manufacturers*	*AV Course*	*Fellow Teacher*	*Professional Journal*	*No Source*
Total	4,166	*42%*	*14%*	*18%*	*13%*	*9%*	*4%*
K-3	2,114	*43*	*11*	*20*	*14*	*8*	*4*
4-6	1,567	*43*	*15*	*15*	*12*	*10*	*4*
7-9	309	*32*	*24*	*15*	*10*	*13*	*6*
1-6, 1-8	176	*29*	*19*	*15*	*15*	*16*	*6*

B. *Secondary Teachers by Subject Taught*

		Percent of Teachers Who Obtain Information from					
Subject Taught	*Number of Teachers*	*School Catalog*	*Manufacturers*	*AV Course*	*Fellow Teacher*	*Professional Journal*	*No Source*
Total	6,464	*23%*	*30%*	*10%*	*12%*	*18%*	*7%*
Science	735	*30*	*34*	*8*	*14*	*10*	*4*
Social studies	894	*28*	*31*	*11*	*15*	*12*	*5*
Fine arts	406	*19*	*32*	*8*	*9*	*25*	*6*
Language	427	*18*	*32*	*12*	*8*	*23*	*6*
English	1,219	*24*	*22*	*11*	*17*	*18*	*8*
Applied arts	1,274	*16*	*38*	*10*	*5*	*25*	*6*
P.E., Guidance	747	*26*	*28*	*10*	*10*	*20*	*6*
Mathematics	762	*24*	*23*	*11*	*18*	*13*	*11*

TABLE 13

Major Job of Audiovisual Coordinator

A. *Elementary Schools by District Size*

		Percent of Schools with Coordinator in Each Job Category					
District Size	*Number of Schools*	*Principal, Assistant Principal*	*Class-room Teacher*	*District-Level Personnel*	*Librarian*	*AV Coor-dinator*	*No Coor-dinator*
Total	308	41%	28%	13%	6%	—	12%
12,000-24,999	40	32	48	10	8	—	2
6,000-11,999	68	35	34	4	13	—	13
3,000- 5,999	70	44	22	21	1	—	11
1,200- 2,999	70	46	20	14	4	—	16
150- 1,199	60	47	28	10	2	—	13

B. *Secondary Schools by District Size*

		Percent of Schools with Coordinator in Each Job Category					
District Size	*Number of Schools*	*Principal, Assistant Principal*	*Class-room Teacher*	*District-Level Personnel*	*Librarian*	*AV Coor-dinator*	*No Coor-dinator*
Total	209	21%	47%	6%	13%	4%	9%
12,000-24,999	25	20	36	8	24	—	12
6,000-11,999	33	18	48	6	15	6	6
3,000- 5,999	47	17	49	6	17	8	2
1,200- 2,999	58	16	57	9	10	5	3
150- 1,199	46	35	37	—	6	—	22

Statistics on the other variables studied are presented in detail in Tables A-15 through A-25.[6]

As shown in Table 13, elementary school coordination was most often done by the principal or assistant principal in districts with fewer than 6,000 students and by a classroom teacher in larger districts. A different pattern obtained in the secondary schools where the building coordinator was more likely to be a classroom teacher in all district size categories About one-quarter of these teacher-coordinators were in science or social udies, fields in which there is relatively high use of audiovisual techniques

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[6] Although 80 percent of the teacher-coordinators responded, the number of audiovisual questionnaires analyzed (291) is considerably smaller than the number of schools in the sample because:

1. In 55 of the schools, the principal reported that no one performed coordinator duties.
2. In 170 schools, the building coordinator was the principal. The audiovisual questionnaire was designed so that a principal performing this function did not have to fill out the second form. However, 24 principals chose to do so. Examination of the two sets of returns indicates that these principals responded somewhat differently when they put on their other hats, so their protocols were included in the analysis.

The category of "district-level personnel" represents an interting pattern of coordination. Several districts, particularly those that serv a relatively small geographical area and fewer than ten schools, handle a audiovisual matters directly from the central administration without the intenediary of a building coordinator. The district-level specialist may travel frn school to school and is recognized by the principal (and usually by the fulty) as the audiovisual "expert," but he is not a building coordinator in the rict sense of the word.

It is understandable that so few elementary schools had librarn-coordinators; few elementary schools had full-time librarians. It is less adily apparent why more librarians did not perform this function in the igh schools, even in the larger districts where full-time librarians are the rul rather than the exception. The division of responsibility between the handlg of audiovisual and printed materials may represent a difference in th importance placed on each of them in the school curriculum, or it may resul from a lack of exposure to "nonbook" materials and equipment maintenanc n the training of the average school librarian.

Whatever their major assignment, approximately 80 percent f the building coordinators reported some form of specialized training i the use of audiovisual materials—a college course (40 percent), inservic training or workshops (12 percent), or a combination of the two (29 percent Supplementary inservice training, presumably more recent than the basic clege course, was most noticeable among elementary coordinators (see Tabs A-15 and A-16).

Essentially all of the building coordinators worked under th handicap of lack of time in which to do the job. Fewer than 15 percent of t elementary respondents and only 25 percent of the secondary respondents ported that they spent more than one-fourth of their time on audiovisual dies. No elementary coordinator and only four secondary coordinators spen full time at the job. A similar lack of released time was reported in McMahn's study of the building coordinator in Michigan (26).

It is not surprising, therefore, as shown in Table 14, that th coordinator functioned chiefly as a logistics specialist, ordering and scheling equipment and materials. His other most frequent services were teacng teachers how to operate equipment, providing them with information abt materials, and, if he was a secondary coordinator, repairing and maintning equipment. Very few building coordinators were called upon to prepa special materials for a specific subject or teacher.

TABLE 14

Major Services AV Coordinators Perform for Both Types of Schools (Services listed in order of choice)

Type of Service	*Percent of AV Coordinators Who Perform Service*[a] *Elementary*	*Secondary*
Number of AV Coordinators	134	157
Orders and schedules media	75%	82%
Teaches operation of equipment	51	42
Provides data on new materials	38	35
Suggests appropriate materials	42	29
Classifies and stores materials	28	30
Maintains equipment	25	46
Suggests new uses for materials	28	24
Prepares specialized materials	3	3

[a] Each AV coordinator was asked to check the *three* most important services he performed.

The services performed were generally the same for both types of schools and for all district size categories, with one major exception (cf. Tables A-20 and A-23). A relatively larger number of elementary school coordinators reported that they assisted in the more professional or "creative" aspects of the task (suggesting new materials or new uses for those on hand). Secondary school coordinators more often provided clerical and technical support (ordering, scheduling, and maintenance). These differences may reflect in part the specialized nature of the high school curriculum which requires a more intimate knowledge of a variety of materials than a single part-time coordinator can be expected to provide, or they may be the result of the historical development of the position. Many teachers become audiovisual coordinators because they know how to work with equipment rather, perhaps, than because they know how to work with teachers or materials.

Despite the fact that his duties were primarily clerical and technical and most often performed in conjunction with a full teaching or administrative load, the building coordinator was positively inclined toward his task. Not only did he prefer it to other nonteaching duties (in 64 percent of the cases), but he was convinced of the value of audiovisual instructional techniques. Sixty-two percent of the coordinators said that audiovisual materials should be an integral part of the curriculum, as compared with 55 percent of the principals, 42 percent of the teachers, and 37 percent of the superintendents.

No matter how committed he may be, the ultimate measure of the building coordinator's success is how well he serves the teacher. Each teacher was asked to check the type of assistance he needed in order to use audiovisual techniques effectively and whether or not there was anyone in his school who gave him the desired assistance. The building coordinator was called upon by 42 percent of the elementary teachers and 39 percent of the secondary teachers. Although he was the single most important personnel resource for all grades and subjects, he could not provide all types of assistance desired. Secondary teachers of art, music, mathematics, and language and those who taught a single subject (again often art or music) across the elementary grades were least likely to obtain help from the audiovisual coordinator. Other school personnel were consulted, but 28 percent of the teachers reported that they needed some service which no one in their school could provide. Another 10 percent claimed to be self-sufficient (see Tables A-17 and A-18).

Discrepancies between the kinds of assistance teachers want and the coordinator's actual tasks stand out when we compare the differential emphasis placed on the eight services by principals, coordinators, and teachers. Rank order distributions (in order of importance as determined by frequency of mention for each respondent group) are given in Table 15. Base statistics can be found in Tables A-19 through A-25.

The teachers considered the clerical and custodial functions currently performed by the building coordinator as relatively unimportant. Irrespective of the grade or subject taught, teachers wanted help in keeping up to date on new audiovisual materials, a service ranked fourth by the coordinators.

Instruction in the operation of some kind of equipment was a critical service for one teacher in six, particularly foreign language teachers who are relative newcomers to the audiovisual field. However, the high level of familiarity with the basic equipment and the amount of audiovisual training reported by the respondents indicate that the need for the coordinator to teach in this area can be expected to decline. Few of the teachers wanted help in the preparation of specialized materials; few coordinators expected to make them. Lack of time, facilities, and technical training militate against it.

In contrast to the teachers, principals in both types of schools agreed with the coordinator that his most important task was to order and schedule equipment and materials. The two groups were also in rather close agreement that it was necessary for him to teach other teachers how to use the equipment. The major divergence between the two rank orders was that secondary coordinators ranked maintenance and repair of equipment as their second most important duty, whereas their principals ranked it fifth, putting relatively more emphasis on the dissemination of information about new developments in the field. One suspects that with so little time available for audiovisual activities, the secondary school coordinator is forced to take care of housekeeping chores and crises first, despite what the principal would like him to do.

With the exception that both principals and coordinators in large districts

TABLE 15

Rank Order of Most Important Services of AV Coordinators as Seen by Principals, Coordinators, and Teachers[a]

	Rank Order[b] *of Importance of Service*					
	Elementary Schools			*Secondary Schools*		
Type of Service	*Principals*	*Coordinators*	*Teachers*	*Principals*	*Coordinators*	*Teachers*
Number of Respondents	308	134	4,166	209	157	6,464
Orders and schedules media	1	1	5	1	1	4
Provides data on new materials	3	4	1	2	4	1
Teaches operation of equipment	2	2	3	3	3	3
Suggests appropriate materials	4	3	2	4	6	2
Suggests new uses for materials	5	6	4	6	7	5
Maintains equipment	6	7	7	5	2	7
Classifies and stores materials	7	5	8	7	5	8
Prepares specialized materials	8	8	6	8	8	6

[a] Audiovisual coordinators were asked to check the services they *actually performed.* Principals were asked to check the services they *thought most important for their schools.* Teachers were asked to check the services they *needed most.*

[b] The eight services are ranked in order of importance by frequency of mention for each group of respondents.

put somewhat more emphasis on providing teachers with information about new materials, there was considerable agreement on the relative importance of each service within each group of respondents across district size categories.

SUMMARY: AUDIOVISUAL RESOURCES

The 517 schools surveyed had a reasonable variety of audiovisual equipment. Essentially, every school had at least one 16mm projector, slide-filmstrip projector, and record player. Almost all of the secondary schools and three-fourths of the elementary schools had tape recorders; and the majority of the secondary schools had at least one opaque projector, television set, and overhead projector.

School-based materials collections were highly variable in both type and amount. Most of the schools maintained a library of filmstrips and records, but few had more than a token collection of slides and tapes. Sound films, especially when used for secondary instruction, were obtained primarily from educational sources outside of the school district.

Students at all grade levels were directly involved in the process of providing AV services to the classroom. PTA's were most actively involved in the elementary schools, where they purchased record players, tape recorders, and television sets for their children's use. Although faculty participation was largely informal and voluntary, the majority of the teachers had made suggestions which resulted in the acquisition of new equipment or materials.

Most of the school districts prepared audiovisual catalogues designed to assist the teacher in planning his course of study. However, 22 percent of the teachers stated that the information furnished was insufficient for their needs, and another 19 percent said that they did not receive any information on audiovisual materials from their school district.

Ninety percent of the schools had a building coordinator who functioned primarily as a supply officer. This function was most frequently performed by the principal or a classroom teacher on a part-time basis, and only infrequently (in 10 percent of the cases) by the school librarian. Although highly committed to his task, the building coordinator had little time in which to advise teachers on effective use of materials or to appraise them of the potentialities of new developments in audiovisual technology.

3. Use of Audiovisual Resources by the Teacher

Up to this point, the discussion has centered on the resources available either in the school district or in the individual school. In this chapter, the focus is on factors associated with use of these resources in the classroom. Use can be measured by: (1) the proportion of teachers who use any audiovisual material at all, (2) the proportion who use any one material frequently, or (3) the proportion who use a variety of media. All three measures were employed in this study.

As instructional goals, practices, and curriculum content differ by grade and subject, it is logical to assume that the use of audiovisual materials will vary by grade and subject taught. Therefore, all analyses of media use were made by grade level for elementary schools and subject area for secondary schools. Findings presented in this manner have the further advantage of direct relevance to the needs of curriculum planners, teacher training institutions, and instructional materials producers, all of whom speak to the teacher as a subject-matter specialist.

Emphasis on grade level and subject does not imply that other teacher-related variables are not associated with the use (or nonuse) of audiovisual technology. It does imply, however, that the relationship between use patterns and other factors (e.g., sex, experience, training) can be examined more fruitfully when grade level and subject specialization are held constant.

Each respondent was classified according to his major teaching assignment. Elementary teachers were grouped into four categories—kindergarten through third grade, fourth through sixth grade, seventh through ninth grade,[1] and those who teach across all six or eight grades. The latter group are usually specialists in art, music, physical education, or special education. Secondary respondents were grouped into eight subject categories—science, social studies, fine arts (music and art), foreign language, English, applied arts (industrial, home economics, and commercial education), physical education and guidance, and mathematics. In the great majority of the cases, the major assignment was the only assignment; 90 percent of the elementary teachers taught only one grade; 80 percent of the secondary teachers taught only one subject.

INCIDENCE OF MEDIA USE

As shown in Table 16, incidence of use was high for all elementary grade levels but varied with subject specialty in the secondary schools. Here the proportion of users of *any* audiovisual material ranged from a high of 95 percent for science to a low of 45 percent for mathematics.

For eight of the twelve teacher subgroups, incidence of use is unrelated to district size. Although there is some variation, the relationship is neither linear nor powerful. The pattern for the other four groups was not consistent. The proportion of users among elementary teachers in grades 7-9 and secondary English instructors is somewhat smaller in districts with 1,200 or fewer

TABLE 16

Use of Any Audiovisual Medium

A. *Elementary Teachers by Grade Taught*

Grade Taught	*Number of Teachers*	*Percent of Teachers Who Use Any AV Materials*
Total	4,166	94%
K-3	2,114	94
4-6	1,567	96
7-9	309	88
1-6, 1-8	176	86

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[1] Although the category is composed essentially of seventh and eighth grade teachers, there are still a few nine-grade elementary schools.

B. *Secondary Teachers by Subject Taught*

Subject Taught	*Number of Teachers*	*Percent of Teachers Who Use Any AV Materials*
Total	6,464	*81%*
Science	735	*95*
Social studies	894	*91*
Fine arts	406	*91*
Language	427	*89*
English	1,219	*84*
Applied arts	1,274	*83*
P.E., Guidance	747	*75*
Mathematics	762	*45*

students than that reported for these two groups in any of the other four size categories. Conversely, there was a marked increase in the proportion of users among physical education and mathematics teachers in these same small districts (see Tables A-26 and A-27).

In the main, school size was unrelated to incidence of use. For three of the four elementary groups, the proportion of users was uniformly high (80 percent or better) regardless of school size. In the fourth group (grades 7-9), the user proportion dropped from an average of 90 percent to 66 percent in schools with ten or fewer teachers (see Table A-28). Incidence of use in seven of the secondary subject categories is also quite consistent across school size. The exception is mathematics, where the user proportion increases sharply in schools with 30 or fewer teachers (see Table A-29).

One possible explanation for the latter finding is that faculty members in small high schools may be called upon to teach another subject in addition to their specialty. Approximately 30 percent of the mathematics instructors in small schools had such an assignment as compared with 10 percent of their counterparts in large schools. Unfortunately, we do not know whether the atypical respondents were using audiovisual materials in mathematics or in their other subject, but we suspect it may well be the latter—particularly since the second assignment was most often science, a "high-use" subject area.

The finding that teachers in grades 7-9 in small schools do not fit the general pattern for elementary teachers is more perplexing. The lower incidence of use cannot readily be attributed to differential teaching assignments. As far as we can ascertain, teachers in the upper elementary grades have similar duties and curriculum goals in schools of all sizes. The finding remains an enigma, albeit a relatively minor one, in view of the generally high incidence of use of audiovisual media for all elementary grade levels in all district and school size categories.

PERSONAL CHARACTERISTICS AND INCIDENCE OF USE[2]

Such personal characteristics as sex, education, and length of teaching experience have some bearing on the likelihood that a teacher will use audiovisual materials in his classroom instruction, but the relationships are usually slight and often inconsistent among grade and subject specialties. Mathematics teachers, in particular, appear to be a deviant group.

Kelley found a highly significant relationship between sex and attitude toward audiovisual materials. In his sample there was a definite tendency for women to have more positive attitudes than men (24). If this tendency is a reflection of a general predisposition to act, we would expect to find a higher incidence of use among female teachers in all fields. Such a hypothesis was not supported when incidence of use was examined by sex of respondents for eight groups in the Wayne and Kingsbury study.[3] The comparisons given in Table 17 indicate that the relative number of users was higher for men than for women in all eight groups, ranging from essentially no difference for mathematics to sizable differences of 9 and 10 percentage points for social studies and grades 7-9.

The degree of formal education had a slight positive association with incidence of use. The rule "the lower the educational attainment of a given group, the lower the proportion of users in it" applied to eight of the nine groups analyzed. Only the mathematics teachers contradicted this nutshell summary by showing a higher proportion of users among holders of the baccalaureate degree than among those with the master's degree (see Tables A-30 and A-31).

Unlike the amount of formal education, the program of study was not related to incidence of use. Secondary teachers whose highest degree was in a subject-matter field were as likely to use audiovisual techniques as were those whose highest degree was in education. In all six instances, the group differences were negligible and in no case exceeded four percentage points.

Length of teaching experience appears to have little effect on the proportion of users within a grade or subject specialty. One deviation is worthy of note: veterans of 20 years and over in mathematics (and to a lesser degree in social studies and language) report a clearly smaller relative number of audiovisual users than their associates with shorter teaching careers (see Tables A-32 and A-33).

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[2] Findings on the relationship between personal characteristics and use reported in this and the following section are based on a supplementary analysis of the 1962 data performed in 1964 by Ivor Wayne and Nancy Kingsbury (42). Their analysis excluded elementary teachers who spanned all six or eight grades and secondary teachers in applied arts, physical education, and guidance. Otherwise, the two studies dealt with the same teacher population.

[3] There were not enough men to make a valid comparison in grades K-3.

TABLE 17

Use of Audiovisual Media by Sex of Teacher

A. *Selected Elementary Grades*

Grade Taught	*Males*		*Females*		*Difference in Percent Users (M-F)*
	Number	*Percent Users*	*Number*	*Percent Users*	
Total	498	96%	3,490	94%	2%
K-3	12	[ ]	2,101	94	[ ]
4-6	328	98	1,238	95	3+[a]
7-9	158	92	151	82	10+[a]

B. *Selected Secondary Subjects*

Subject Taught	*Males*		*Females*		*Difference in Percent Users (M-F)*
	Number	*Percent Users*	*Number*	*Percent Users*	
Total	2,488	83%	1,943	80%	3%
Science	583	96	152	91	5+[a]
Social studies	636	94	258	85	9++[b]
Fine arts	271	92	120	88	4
Language	140	89	287	88	1
English	375	85	844	84	1
Mathematics	482	45	280	45	—

[a] + difference significant at the 0.05 level.

[b] ++ difference significant at the 0.01 level.

The most consistent differences between users and nonusers are those related to the sex of the respondent. However, while males are significantly more likely to use audiovisual materials in the traditional audiovisual fields of science and social studies, the sex differences are negligible in English, foreign language, and mathematics, where the use of audiovisual technology is relatively new. Perhaps the critical intervening variable for these subject specialties is a receptivity to innovative techniques, some of which involve rather complicated electronic devices. At any rate, female foreign language teachers appear to be as favorably disposed toward the use of the language laboratory as are their male counterparts.

TEACHER TRAINING AND INCIDENCE OF USE

Most educators recommend and several states require that prospective teachers take a college course in the use of audiovisual techniques. In addition, many school districts offer inservice training to acquaint or refresh their faculties with the classroom applications of instructional technology. Almost 60 percent of the teacher respondents had received some form of audiovisual training, most often in college. Thirty-four percent had only college training; 9 percent had supplemented this experience with inservice courses or summer workshops; and another 16 percent had picked up all of their audiovisual training on the job or outside the educational world, e.g., in military service. An interesting point in the comparison of the type of training reported is that elementary teachers at all grade levels had availed themselves of inservice training (either in conjunction with a college course or in lieu of a college course) more frequently than any of the secondary subject groups.

In all areas except science, teachers who had received some specialized training were more likely to use audiovisual materials than their untrained colleagues. A combination of college and inservice training was in turn associated with a somewhat higher incidence of use in the elementary grades—particularly in grades K-3 where this training group reported almost 100 percent usage (see Table A-34). Inservice training, either alone or in conjunction with college work, was a particularly good predictor of audiovisual use for the mathematics teacher (see Table A-35).

As might have been expected, users in all grades and subjects were more frequently familiar with the five major pieces of equipment than were their colleagues who made no use of audiovisual technology during the fall semester of 1961-62. In each of the 45 comparisons given in Table 18, the relative number of those familiar with the equipment was higher among the users than among the nonusers. The differences ranged from 7 percentage points for the slide-filmstrip projector for mathematics to 57 percentage points for the tape recorder for language.

Despite marked differences in degree, the *order* of familiarity with the five items (from slide-filmstrip projector to overhead projector) was the same for both users and nonusers in a given grade or subject with one exception—the ranks for tape recorder and opaque projector were reversed between users and nonusers in science.

Returning to the analysis of the association between familiarity and use, we find that the proportion of respondents who were familiar with the equipment and yet had used no audiovisual materials during the survey semester was surprisingly high. It is possible that some may have been discouraged by past experience with intractable machines, and, where there were enough nonusers to make meaningful comparisons, relatively more of them rated a spe-

TABLE 18

Familiarity with Operation of Audiovisual Equipment Within Selected Elementary Grades and Secondary Subjects by Use of Audiovisual Media

		Percent of Teachers Who Have Operated Equipment[a]				
Grade or Subject	*Number*	*Slide-Filmstrip Projector*	*16mm Projector*	*Tape Recorder*	*Opaque Projector*	*Overhead Projector*
K-3						
Users	1,994	90%	81%	59%	52%	18%
Nonusers	120	64	58	38	32	6
4-6						
Users	1,502	93	85	70	67	28
Nonusers	65	65	54	39	34	15
7-9						
Users	271	93	85	77	68	38
Nonusers	38	68	53	50	42	24
Science						
Users	697	95	95	69	62	61
Nonusers	38	82	84	45	53	39
Social studies						
Users	815	90	88	75	63	43
Nonusers	79	76	73	46	43	27
Fine arts						
Users	354	82	77	83	57	35
Nonusers	37	54	54	62	38	16
Language						
Users	379	75	66	88	38	22
Nonusers	48	29	29	31	17	10
English						
Users	1,033	78	69	76	53	28
Nonusers	190	61	51	53	36	17
Mathematics						
Users	344	84	83	58	57	49
Nonusers	418	77	70	49	41	31

[a] Included in this category are those teachers who replied that they "find hard to operate," "find easy to operate," or "can teach someone else"; all differences between proportions of users and nonusers are significant except for the cell science/opaque projector.

cific item difficult to operate. However, the differences were slight, in no case over 10 percentage points, and only two items—the 16mm projector and the tape recorder—were labeled difficult to operate by as many as 20 percent of any subgroup.

These data do not support the contention that teachers avoid the use of audiovisual media because they feel inept or clumsy in working with the equipment. In fact, the most complex machine in general use (the 16mm projector) is also the most popular one. The data suggest instead that exposure to the equipment, while important, is not enough. There must also be persuasive evidence that a machine can be used to instructional advantage. A person is not likely to want to use a technique about which he is unconvinced.

MEDIA PREFERENCES

Teachers in any grade or subject could, and did, use any of the media studied; however, the traditional materials (films, filmstrips, and records) were the most popular in all instructional groups. Their preeminence was challenged only by the specialized use of language tapes and the relatively high incidence of use of television in elementary instruction, especially in grades 4-6.

The proportions of teachers in each of the original subgroups who used each of the nine media are given in Table 19. In order to assure that a respondent could use the material in question, all analyses were made with only those teachers who had direct access to the necessary equipment. Films were preferred by eight groups;[4] records by four; and tapes by one. Filmstrips were the second or third most frequently used material in all areas except language.

The popularity of the three traditional materials is not surprising. Films and filmstrips have been designed for all subject and grade levels. Records have somewhat more limited applicability but fit well with much of the elementary curriculum and are especially appropriate for instruction in music, English, and foreign language. What is important is that relatively few teachers used the other media, even when they had direct access to the equipment.

Even so, there were decided differences in frequency of use of television, radio, 2 x 2 slides, and opaque and overhead projectors. In elementary schools, all five were most often employed in grades 4-6. In secondary schools, radio and television were used most often in social studies; 2 x 2 slides were used most often in foreign language; and overhead and opaque projectors were used most often in science.

These findings make sense when one considers what each specialty teaches. The widest range of subject matter is probably taught in grades 4-6; radio and television are well suited for the study of current events; slides of the teacher's trip to Rome can go a long way toward resuscitating Latin; scientific charts and diagrams were among the first materials put on transparencies. It should be noted that the possibility of preparing diagrams and equations be-

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[4] One of these groups is art, whose preference for films is obscured in Table 19 because they are outnumbered 245 to 161 by their musical colleagues in the fine arts category.

TABLE 19

Use of Selected Media

A. *Elementary Teachers by Grade Taught*

Grade Taught	*Number of Teachers*	*Percent of Teachers Who Use*								
		Films	*Film-strips*	*Records*	*Tapes*	*TV*	*Radio*	*Opaque Projector*	*2 x 2 Slides*	*Overhead Projector*
K-3	2,144	70%	74%	82%	16%	49%	26%	22%	12%	11%
4-6	1,567[a]	80	76	75	25	72	41	45	23	18
7-9	309	67	60	45	16	49	32	32	17	18
1-6, 1-8	176	44	57	65	19	38	16	28	12	9

B. *Secondary Teachers by Subject Taught*

Subject Taught	*Number of Teachers*	*Percent of Teachers Who Use*								
		Films	*Film-strips*	*Records*	*Tapes*	*TV*	*Radio*	*Opaque Projector*	*2 x 2 Slides*	*Overhead Projector*
Science	735[a]	83%	62%	17%	11%	31%	19%	24%	23%	27%
Social studies	894	75	56	40	22	36	31	19	18	11
Fine arts	406	48	31	64	42	17	11	17	19	10
Language	427	36	32	67	68	11	8	10	27	2
English	1,219	40	31	63	20	25	19	17	11	8
Applied arts	1,274	61	47	29	12	8	7	13	11	7
P.E., Guidance	747	55	36	30	12	13	7	7	5	7
Mathematics	762	25	22	6	3	9	8	7	3	13

[a] The number of teachers is constant for the first four columns in the table. (See Tables A-36 through A-55 for the number of teachers for the other six columns.)

fore class and preserving them afterwards seems to hold some appeal for the mathematics teacher; whereas he ranks at or near the bottom in the use of all other media, he ranked second in the use of the overhead.

FREQUENCY OF USE OF PREFERRED MEDIUM

Up to this point, the analysis of teacher use has been limited to a discussion of how many respondents with what characteristics used any material and which media were preferred by each grade and subject group. Our second measure addresses itself to the frequency, or level, of use. No educator has presumed to set quantitative standards of how often audiovisual materials should be used. One well-developed film showing may have considerably more instructional value than several Friday afternoon movies. However, if a teacher is convinced of the worth of an instructional technique, he is likely to employ it on a regular basis. Using the typical 18-week semester as the unit of measure, we made the judgment that if a teacher used a material less than 10 times (an average of once every two weeks), he was an infrequent user. If he used a material 20 or more times during the semester (an average of at least once a week), he was a regular or "high" user.

In order to simplify the discussion, only the distribution for the preferred medium for each grade or subject is given in Table 20; detailed distributions of frequency of use for all nine media may be found in Tables A-36 through A-55. The preferred medium measure proved to be a satisfactory index of overall "high," "medium," or "low" use. The relationships between frequency of use of the favorite and all other media were compared for ten grade and subject groups (excluding grades 1-6, 1-8, applied arts, and physical education and guidance). In each instance, the highest frequency of use was reported for the preferred material, and the level of use of the favored medium was generally indicative of the level of use for all other materials.

High use was more characteristic of records and tapes than of films. Outside of English, one-third or more of the teachers for whom recordings were the preferred medium used these materials on a regular weekly basis. In contrast, no more than 16 percent of the teachers in any of the groups that preferred films used them that frequently. For eight of the nine groups, the typical (or modal) pattern was infrequent use, most often less than five times a semester. For mathematics, the most frequent pattern was no use at all. It is clear that auditory instruction via tapes or records was much more likely to be an integral part of the regular classroom routine than was instruction via any of the visual media.[5]

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[5] Filmstrips were the only other material used more than 20 times during the semester by as many as 10 percent of the teachers in any group—and then only in grades K-3 and 4-6.

TABLE 20

Use of Preferred Medium

A. *Elementary Teachers by Grade Taught*

Grade Taught	*Number of Teachers*	*Most Frequently Used Material*	*Percent of Teachers in Use Category* *Times Used per Semester* 0	1-9	10-19	20+
K-3	2,114	Records	*18%*	*21%*	*21%*	*40%*
4-6	1,567	Films	*20*	*40*	*26*	*14*
7-9	309	Films	*33*	*46*	*15*	*6*
1-6, 1-8	176	Records	*35*	*16*	*15*	*34*

B. *Secondary Teachers by Subject Taught*

Subject Taught	*Number of Teachers*	*Most Frequently Used Material*	*Percent of Teachers in Use Category* *Times Used per Semester* 0	1-9	10-19	20+
Science	735	Films	*17%*	*42%*	*25%*	*16%*
Social studies	894	Films	*25*	*48*	*19*	*8*
Music	245	Records	*17*	*21*	*16*	*45*
Art	161	Films	*34*	*49*	*10*	*7*
Language	427	Tapes	*31*	*21*	*15*	*33*
English	1,219	Records	*37*	*48*	*11*	*4*
Applied arts	1,274	Films	*39*	*41*	*14*	*6*
P.E., Guidance	747	Films	*45*	*40*	*12*	*3*
Mathematics	762	Films	*75*	*21*	*3*	*1*

VARIETY OF MEDIA USED

Our third measure of commitment to the value of audiovisual technology was the variety of media employed by the teacher. The multimedia approach appears to be more compatible with instructional philosophy in the elementary grades. As shown in Table 21, 73 percent of the elementary respondents used three or more different materials as compared with 39 percent of the secondary respondents. The modal elementary teacher used records, films, filmstrips, and either radio or television. The modal secondary teacher, except for social studies and language, restricted his use to films and filmstrips or records and films. This finding is particularly significant in view of the greater variety of resources available to the secondary teacher.

Use of more than the average number of media for their type of school was most characteristic of grades 4-6 and social studies. However, there was rela-

TABLE 21

Number of Audiovisual Media Used

A. *Elementary Teachers by Grade Taught*

Grade Taught	*Number of Teachers*	*Percent of Teachers in Category*				
		Number of Media Used				
		0	1-2	3-4	5-6	7-10
Total	4,166	6%	21%	40%	25%	8%
K-3	2,114	6	23	46	21	4
4-6	1,567	4	15	34	33	14
7-9	309	12	27	35	19	7
1-6, 1-8	176	14	34	32	15	5

B. *Secondary Teachers by Subject Taught*

Subject Taught	*Number of Teachers*	*Percent of Teachers in Category*				
		Number of Media Used				
		0	1-2	3-4	5-6	7-10
Total	6,464	19%	42%	28%	9%	2%
Science	735	5	43	37	13	2
Social studies	894	9	32	38	18	3
Fine arts	406	9	46	32	12	1
Language	427	11	37	38	13	1
English	1,219	16	40	32	10	2
Applied arts	1,274	18	51	26	5	—
P.E., Guidance	747	25	48	21	5	1
Mathematics	762	55	34	8	2	1

tively *frequent* use of several materials in grades 4-6; there was relatively *infrequent* use of several materials in social studies. The variation in pattern of use suggests that audiovisual technology may serve different functions in the two areas of instruction. The difference in the percent of each group who thought that audiovisual materials were best used as an integral part of their course work (53 percent in grades 4-6 and 43 percent in social studies) indicates that the latter group were more inclined to use audiovisual techniques to supplement or highlight instruction than for direct teaching.

PURPOSES FOR WHICH MEDIA ARE USED

Eighty-six percent of the respondents had used some audiovisual material, typically a film, a filmstrip, or a record, at least once during the fall semester of 1961-62. However, few teachers used any one material as often as once a week.

High use (20 times or more during the semester) was more characteristic of records and language tapes than it was of either films or filmstrips.

A clue to why there is not more frequent use of audiovisual materials in the classroom can be found in the purposes for which teachers employ these instructional tools. Responses to the question of how often audiovisual media were used for enrichment, motivation, direct teaching, review, or cultural activity[6] were summarized by means of assigning a score of 1 for *very often*, 2 for *sometimes*, 3 for *seldom*, and 4 for *never*. This "index of use" indicates that audiovisual materials were used primarily for enrichment by all teacher subgroups (see Tables A-56 and A-57). The finding that fine arts and language teachers used audiovisual materials more often than any other group for "cultural activity" is understandable if filmstrips or slides are used to depict the life of a composer or an artist or the culture of a country whose language is being studied. It is not so easy to reconcile with the use of language tapes and records which are designed to serve as vehicles for direct instruction in linguistic skills or musical acumen.

RECAPITULATION

The type of school in which a respondent taught and, more specifically, the subject he taught were critical variables associated with his use of audiovisual technology. Elementary teachers used a greater variety of materials and used them more frequently than secondary teachers, despite the fact that there was a greater variety of equipment available in the high school. Among the subject specialties, only in science, music, and foreign language was any material used on a regular basis. Several media were used in social studies, but none with high frequency.

Teachers in any grade or subject could, and did, use any of the nine media studied. Nevertheless, there was a clear preference for either films or records for all subject and grade areas except language and mathematics. Language teachers used records or tapes with almost equal frequency; mathematics teachers used films or filmstrips about equally. There were also decided preferences by subject and grade for each of the other less common materials.

The pervasive tendency to employ audiovisual technology infrequently and essentially for enrichment is probably related to historical attitudes about the function of music and pictures in the classroom, as well as the fact that many of the readily available materials are of a general nature best suited to supplement concepts presented in the text or by the teacher.

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[6] The questionnaire items "to illustrate a principle" and "to provide general background for a unit" were dropped from the analysis as yielding little additional information.

4. Philosophy, Problems, and Plans

The third ingredient in our description of audiovisual programs in the schools is the climate of opinion within which educational media are used. This chapter of the report compares opinions of superintendents, principals, building coordinators, and elementary and secondary teachers about: (a) the centrality of audiovisual technology in the teaching process; (b) the problems which hinder effective use of audiovisual media; and (c) the plans of administrators and teachers for future use of various materials.

BEST USE OF AUDIOVISUAL MEDIA

Audiovisual materials can be used as an integral part of a course of instruction, for supplementary information, or to highlight a special unit. The proportions of each group of respondents who chose each of the three alternatives are given in Table 22.

A district superintendent has many complex factors to weigh in assessing any part of his school program. He cannot evaluate a teaching device from the perspective of a single school or of a single subject. It is not too surprising, therefore, that the superintendents' evaluations of audiovisual technology were less decisive than those of any other group of respondents; 28 percent of the superintendents would not make a general assessment, stating that audiovisual materials could be central or peripheral, depending on the grade, subject, or medium considered. The refusal to judge was most characteristic in districts with over 12,000 pupils, where the administrator must cope with the greatest variety of teaching situations. Unlike their superintendents, principals

TABLE 22
Best Use of Audiovisual Materials
Superintendents, Principals, Coordinators, and Teachers
Elementary and Secondary Schools

		Percent Who See AV Materials as			
Type of Respondent	*Number of Respondents*	*Integral Part of Course*	*Supplementary Information*	*Highlight, Special Unit*	*No Choice*
Superintendents	247	37%	31%	4%	28%
Elementary					
Principals	308	55	37	4	4
AV coordinators	134	60	34	2	4
Teachers	4,166	47	38	10	5
K-3	2,114	44	40	11	5
4-6	1,567	53	36	8	3
7-9	309	48	37	11	4
1-6, 1-8	176	44	36	11	9
Secondary					
Principals	209	57	36	5	2
AV coordinators	157	65	28	2	5
Teachers	6,464	39	41	16	4
Science	735	53	37	8	2
Social studies	894	43	43	12	2
Fine arts	406	44	38	15	3
Language	427	48	35	12	5
English	1,219	32	42	22	4
Applied arts	1,274	38	44	14	4
P.E., Guidance	747	40	40	14	6
Mathematics	762	27	44	22	7

and coordinators in districts with 12,000 to 25,000 pupils had little difficulty in assessing the best use of audiovisual materials and were favorably disposed toward a central place for these media—except for a curious 50-50 split among the 26 elementary coordinators.

If one takes the optimistic view, the finding that 55 percent of the total sample of 517 principals considered audiovisual technology to be an integral part of the curriculum is encouraging for the future of the field. We suspect that the principal holds a key position in the channel of acceptance for any classroom innovation, being truly liaison between the school district administration, the community, and the teacher.

The building coordinators considered audiovisual materials more essential than any other group of respondents. Such enthusiasm is understandable. The majority of the coordinators prefer their duties to other nonteaching assignments and have demonstrated interest by supplementing their basic college background course with inservice training. Furthermore, they are often recruited from science and social studies, areas in which audiovisual materials have established their value.

No group of teachers matched the enthusiasm of either their coordinators or their principals. However, taken as a whole, elementary teachers were more inclined than secondary teachers to view audiovisual technology as an integral part of course instruction. At the secondary level, teachers of science, music, and foreign language—fields with both high incidence and high frequency of use—gave a mo[redacted] place to the use of audiovisual techniques than did any of the other subject specialists. The high incidence but relatively low frequency of use in social studies is reflected in the equal split among teachers in that field over whether audiovisual materials should be an integral or supplementary part of course instruction. In English and mathematics, instructional technology was assessed, and used infrequently, as supplementary to a unit of work.

Teachers in grades K-3 are the exception which tests the consistency between assessment and level of use. Primary teachers are among the most frequent users of audiovisual media, yet they consider these materials to be supplemental to their course objectives almost as often as they judge them to be integral to the curriculum. The emphasis on records in the primary grades may provide an explanation for the seeming paradox. Records are often used at this instructional level to provide either a quiet or active respite from the rigors of learning numbers, letters, and sounds. To one teacher, the rest period may be essential for her as well as the children; to another, it may be a welcome but nonessential change of pace.

MAJOR PROBLEMS IN USING AUDIOVISUAL MEDIA

Educators at all levels encounter problems which hamper the effective use of audiovisual materials. There is never enough money; projection conditions are far from ideal; films do not arrive on schedule; some teachers fail to see the value of audiovisual technology; or the added burden of preparing materials for classroom use is just too much to fit into an already crowded schedule. Such complaints are both real and commonplace. However, they may be more or less critical to a particular respondent, depending upon his position in the educational system.

Each respondent was asked to indicate the major difficulties he had experienced in using audiovisual materials—as a superintendent, a principal, a building coordinator, or a teacher. Superintendents were asked to respond spontaneously to the question "What major problems do you have in using audiovisual materials in your teaching program?" The list of twelve statements to which principals, coordinators, and teachers were asked to react was developed from the free responses given by the superintendents.

TABLE 23

Major Problems in Using Audiovisual Media—Superintendents
(Problems listed in order of mention)

Type of Problem	*Percent of Superintendents Who Report Problem*[a]
Number of Superintendents	247
Lack of money for adequate program	38%
Scheduling problems	35
Teachers not trained in AV use	25
Inadequate storage and production facilities	19
Teacher resistance	17
Lack of trained AV personnel	14
Poor classroom facilities	12
Lack of creative use of materials	11
Too little preview time	7
Difficult to provide information to teacher	6
Maintenance and repair of equipment	6
Few good materials available	5
No major problems reported	8

[a] The list of problems is not exactly the same as that for principals, audiovisual coordinators, and teachers in that superintendents were asked to respond spontaneously to an open-ended question asking for their *three* most serious problems.

The twelve problems most frequently listed spontaneously by the superintendents are given in Table 23. Major concerns are basically those of the administrator—lack of money, scheduling problems, inadequate facilities (for storage and production as well as for previewing and classroom use), and a shortage of trained and enthusiastic personnel.

Difficulties in supplying teachers with information, time in which to prepare materials, and the quality of the materials themselves were seldom cited as major problems. Although superintendents were concerned about "teacher resistance" and the failure of their teachers to use audiovisual materials "creatively," they did not specify either lack of time or materials as factors which might contribute to this resistance or noncreative use.

When we look at problems from the point of view of the school personnel, as shown in Table 24, lack of time and a shortage of relevant materials join inadequate facilities and scheduling as major hindrances to the use of audiovisual technology. Insufficient preparation time was the most frequent com-

TABLE 24

Major Problems in Using Audiovisual Media
Principals, Coordinators, and Teachers
for Elementary and Secondary Schools

	Percent of Respondents Reporting Problem					
	Elementary Schools			*Secondary Schools*		
Type of Problem	*Principals*	*Coordinators*	*Teachers*	*Principals*	*Coordinators*	*Teachers*
Number of Respondents	308	134	4,166	209	157	6,464
Too little preview time	*68%*	*74%*	*61%*	*70%*	*71%*	*63%*
Poor classroom setup	*56*	*55*	*44*	*57*	*69*	*50*
Few good materials	*52*	*53*	*21*	*66*	*66*	*34*
Aids not available when needed	*45*	*43*	*44*	*52*	*48*	*47*
Too little information	*33*	*30*	*26*	*38*	*40*	*28*
Difficult to integrate materials	*28*	*25*	*17*	*47*	*41*	*26*
Students see as entertainment	*19*	*19*	*20*	*28*	*26*	*33*
Not enough basic teaching time	*20*	*20*	*25*	*16*	*20*	*30*
Too much "red tape"	*12*	*5*	*23*	*14*	*16*	*34*
Aids too expensive for results achieved	*9*	*10*	*9*	*12*	*14*	*17*
Equipment in poor repair	*7*	*6*	*9*	*6*	*11*	*14*
Difficult to operate equipment	*7*	*7*	*11*	*3*	*6*	*8*
Have no difficulties	*7*	*6*	*8*	—	*2*	*5*

plaint at the school level. Not only did 50 percent or more of the teachers (regardless of grade level or subject area) report that they did not have enough time to preview materials adequately before using them, but principals and coordinators in districts of all sizes were consistently sympathetic to the pressures of a crowded schedule. (See Tables A-58 through A-64 for the details on problems by district size for principals, coordinators, and teachers.)

The school respondents agreed with their superintendents that obsolete or complicated equipment was not a major problem. There was also general agreement that everyone suffers if materials are not available when needed. Hopefully, from the point of view of the teacher, attempts to make scheduling more efficient should not entail too much bureaucratic procedure, as almost one-third of the secondary teachers already complain about the amount of "red tape" involved in the ordering process, particularly in the "high use" subjects (see Tables A-63 and A-64).

All of the school personnel were sensitive to classroom deficiencies and placed inadequate facilities for viewing or listening high on their list of problems. Although one-fifth of the elementary teachers and one-third of the secondary teachers cited a lack of good relevant materials in their subject area, the quality of available materials was more often a major concern to the principal and building coordinator at both instructional levels—except for mathematics teachers, 69 percent of whom named lack of suitable materials as a serious problem (see Table A-64).

Perhaps the differential emphasis is related to the finding that both principals and coordinators give a more central place to audiovisual instruction than do their teachers. The quality of available materials may well be critical to the school administrator who is trying to encourage his faculty to use audiovisual materials as an integral component in the instructional system. Conversely, the immediate relevance of a film or filmstrip may be of less serious concern to a teacher who uses audiovisual materials for occasional supplemental enrichment.

Or perhaps the explanation lies not in a difference of educational philosophy but in the amount of frustration engendered by the exigencies of everyday existence. Teachers may be so acutely aware of the mounting pressures on their time, the disruptions which occur when scheduling goes awry or the inadequacy of a classroom which cannot be darkened easily that these complaints overshadow all others. Whatever the reasons for the teachers to emphasize lack of time, poor classroom facilities, and unsatisfactory scheduling as the most serious hindrances to audiovisual use, there is little variation in the relative importance of all twelve problems across grades in the elementary schools or across "high" and "low" use subjects in the secondary schools, with the already noted exception of mathematics.

FUTURE PLANS FOR MEDIA USE

In 1962, there was high incidence but low frequency of use of audiovisual technology in classroom instruction for most grade and subject areas. Can we expect this pattern of occasional supplemental use to continue or change in the foreseeable future?

Superintendents, principals, and coordinators were asked to project their plans or recommendations for a two-year period (1961-1963 for superintendents, 1962-1964 for principals and coordinators). Teachers were asked their plans for the following semester. Although each type of respondent had a somewhat different point of view and a different time perspective, comparison of the responses can give a general idea of future utilization patterns for each medium.

Administrative plans are critical predictors of future acquisition of audiovisual resources. The superintendent recommends the purchase of equipment and materials to the school board. The principal recommends the adoption of new techniques both to the superintendent and to his faculty. An analysis of teacher plans provides insights into how both old and new resources will be used. A classroom teacher has considerable freedom of choice as to whether or not he will employ a technique or material.

Data on future plans for all types of respondents were reduced to a two-way break between those who did or did not plan to increase use of a medium. Anyone who said either that he planned to try a medium or to emphasize its use was placed in the "increase use" category. Anyone who stated that he would continue his present level of use, did not plan to try a medium, or gave no indication of his future plans was placed in the "status quo" category. Because their recommendations may lead to the adoption of new techniques, the analysis of plans for superintendents, coordinators, and principals encompassed all twelve media, whether or not the school or district had them. Because a teacher cannot use what is not available, the analysis of teacher plans was limited to those items already in the school building, except for the teaching machine, a technique for which we had no inventory data. Plans for all groups are summarized in Table 25 and shown in detail in Tables A-65 through A-71.

If administrators implement their plans, there will be a considerable increase in electronic resources and taped materials for language training and substantial increases in the number of overhead projectors and television sets available for classroom instruction in the next few years. This accelerated growth for the newer media should be accompanied by continuing growth in inventories of filmstrips, records, and opaque projectors in districts and schools of all sizes. The relatively low interest in increased use of films, radio, and 2 x 2 slides exhibited by all groups suggests that administrators and teachers alike may feel that use of such materials is approaching an optimum level.

The building coordinator takes seriously his role of promoting the use of audiovisual technology. Remembering that 70 percent of the building coordinators were also principals, assistant principals, or classroom teachers who may have been drafted for the job and who perform their audiovisual duties largely "after school," this dedication to increased audiovisual instruction, especially a desire to experiment with the newer media, is both heartening and somewhat surprising.

The coordinator's desire to try closed-circuit television is not shared by his superintendent. District administrators, particularly in small systems, may well be reluctant to commit the large amounts of capital necessary for closed-circuit television installations. With this deterrent, we would expect most districts to continue to rely on open-circuit broadcasts.

TABLE 25

Plans for Increased Use of Available Audiovisual Media Superintendents, Principals, Coordinators, and Teachers for Elementary and Secondary Schools

	Percent of Respondents Who Plan To Increase Use[a]						
		Elementary Schools 1962			Secondary Schools 1962		
Medium	*Superintendents 1961*	*Principals*	*Coordinators*	*Teachers*	*Principals*	*Coordinators*	*Teachers*
Number of Respondents	247	308	134	4,166	209	157	6,464
16mm films	26%	22%	21%	20%	21%	32%	23%
Filmstrips	37	38	40	27	38	48	24
Records	36	25	25	17	26	38	18
Tapes, language	56	45	58	26[d]	58	54	26[c]
Tapes, general	36	33	58	26[d]	47	57	12
Broadcast television	29	28	49	18[d]	37	62	18[d]
Radio	12	15	28	14	13	37	10
Opaque projector	38	37	50	26[d]	39	54	15[d]
2 x 2 slides	—[b]	25	42	17	24	50	13
Overhead projector	44	33	63	30[d]	57	69	14[d]
Teaching machine	34	13	64	9	17	79	9
Closed-circuit TV	13	26	66	—[b]	43	72	—[b]

[a] "Increase use" is defined as either planning to try a medium or to emphasize the use of a medium. Respondents who checked "continue present use," "no plan to try," or did not answer were considered as desiring to maintain the status quo.

[b] Superintendents were not asked about plans for 2 x 2 slides. Teachers were asked their plans for using "television programs" without specifying open- or closed-circuit.

[c] These percentages are based on plans of 1,646 language and English teachers only.

[d] These percentages were computed only for teachers in schools which have the item of equipment in the school building. (See Tables A-67, A-70, and A-71 for number of teachers involved.)

It is difficult to predict the future expansion of programed learning, another technique recommended by the building coordinator. A third or more of the superintendents in all but the smallest districts planned to introduce this method of instruction; however, principals and teachers in all district size categories and in all subject areas except mathematics put increased use of programed learning at the bottom of the list.

Even allowing for differences in the time interval over which respondents were asked to project, it appears that teachers were more often satisfied than either principals or coordinators with the status quo. Indeed, they were more conservative even than the superintendent. The desire to continue current patterns of use applied to generally available media (filmstrips, films, and records) as well as to less commonly available media (television and programed materials).

Despite the general tendency to be satisfied with current usage, there were interesting differences in future plans among the various teacher subgroups. Interest in the overhead projector was most pronounced at the elementary level, particularly in grades 4-6, a significant development in view of the fact that the overhead has been primarily a secondary tool. Perhaps the relatively high level of interest among elementary teachers who have ready access to the overhead projector will encourage administrators to put more of this equipment in the elementary school.

At the secondary level, future plans were consistent with present use patterns. Science and mathematics teachers hoped to increase their use of the overhead projector; social studies teachers wanted to make greater use of television; English teachers planned to use more records. Language teachers, who now use tapes and records about equally, would opt for a greater emphasis on tapes in the future. Programed materials had the greatest appeal for the mathematics teacher.

AN APPRAISAL

At the time of our study, technology had entered the schools as machinery; whether it had entered them as part of the instructional system was questionable. Most of the teachers in the survey had learned how to operate the basic equipment through college courses or inservice training, and once familiar with a machine, they found it easy to operate. The majority of the respondents were interested enough in audiovisual technology to suggest that their schools rent or buy equipment or materials. Almost all of the teachers had access to the four basic equipment items, and 40 percent of the secondary teachers taught in schools where all eight portable equipment items were available. Yet, the majority of the respondents did not use any material as often as once a week, nor did they plan to do so in the near future.

Whatever his level of use or whatever problems he may have encountered in employing media effectively, no one wished to discard this instructional resource. There was generalized verbal acceptance of audiovisual technology; however, not everyone was convinced that these instructional techniques should be an integral part of his classroom practice.[1] From the vantage point of this survey, the audiovisual field appears to be closer to solving the technical problem of providing adequate equipment for the schools than it is to solving the instructional problem of providing appropriate materials for *each* grade and subject level.

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[1] Cf. Samuel Cohen's appraisal of the acceptance of audiovisual technology in Wantagh, New York (5). The fact that an evaluation in 1964 fits data collected in 1962 is worthy of note.

Throughout the analysis, we have unfolded a story in which incidence and frequency of use, media preferences, satisfactions with sources of information and materials, and future plans differ with grade and subject specialization. There is a central theme that runs as follows:

Teachers in grades K-3 favored records, using them with relatively high frequency either as an integral part of their program or for supplemental enrichment. Teachers in grades 4-6, who present the widest range of subject matter, used the greatest variety of media and used them more frequently than any other group in the study. Teachers in grades 7-9 preferred films; teachers who span several grade levels, often as specialists in music or physical education, preferred records.

Science teachers used films on a fairly regular basis, often as an integral part of their course of instruction. Social studies teachers also used films, but less regularly and more often as supplementary information. Language teachers tended toward one extreme or the other; either they used no language tapes at all or they used them intensively. English teachers used records occasionally but had not yet adopted a pattern of regular integrated use of any audiovisual materials. Mathematics teachers had only begun to experiment with audiovisual techniques.

The motion picture was still the primary audiovisual tool,[2] but new materials were beginning to have an impact on instruction. Teachers who had not used films were using tapes and records to help them teach the spoken word. Emphasis on transparencies and programed texts designed for mathematics may bring a similar upsurge of interest in audiovisual technology in that field. Already the mathematics teacher was the "second best customer" for the overhead projector, the instrument most akin to his cherished blackboard. He was also attracted to programed learning, perhaps because of its logical structure.

The lesson is there. A single all-purpose tool, no matter how versatile, cannot fulfill every instructional requirement. The teacher is a subject-matter specialist, and his use and evaluation of audiovisual technology is influenced by his view of his professional role. He will respond to techniques and materials which further *his* instructional goals.

We agree with Cohen (5) that individual consultative professional service is as important as adequate and appropriate resources, if audiovisual media are to become more than supplementary "aids" to the majority of the classroom teachers. Understanding the curriculum goals of all of his colleagues is a critical competency required of the building coordinator. He must be a generalist. Perhaps that is why he seems to have been most successful in the elementary schools, where the teacher is also a generalist.

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[2] Cf. the National Education Association study *Audio-Visual Education in Urban School Districts, 1953-54* (31). In many ways, media use has changed little since 1954. "God's mill grinds slow. . ."

The kind of professional service needed varies with the situation and background of the teacher. Science and social studies teachers, reasonably well acquainted with available materials, want information about new audiovisual developments in their fields. Language teachers can use assistance in preparing tapes and records. English and mathematics teachers, relative newcomers to the use of audiovisual media, seek advice on how available materials can be adapted to their specialties. Those who teach one subject area across several grade levels need help in planning for a variety of teaching situations. Those who teach several subjects at one grade level want to know how to employ a wide range of materials effectively.

School system personnel at all levels have a vital role to play in the audiovisual program if technology is to become an integral part of the instructional process. Brickell concluded that district-level administrative initiative was necessary for the introduction of educational innovations (1). Kelley found that supervisory encouragement had a positive effect on teachers' attitudes toward audiovisual technology (24). Preliminary analysis of our sample of schools as operating units suggests that the principal plays a strategic role in transmitting these innovations and encouragements to the teacher. The building coordinator can make an important contribution toward closing the gap between teacher acceptance and utilization of audiovisual techniques if he can be relieved of some of his present clerical and custodial chores. Perhaps the technology he endorses can be used to lighten his programing burdens.

But the critical element in the equation is the teacher himself. Our educational system, as our society, places a high value on individual autonomy. Unless the teacher finds the new technology compatible with his instructional philosophy, it will not join him and the book as a full partner in the instructional process. In 1962, the teacher was not yet convinced.

5. Changes in Audiovisual Resources and Aspirations—1961 to 1964[1]

Throughout the remainder of the monograph, the emphasis is on change. Public school districts do not stand still. They build schools, add teachers, and enlarge classes to house and instruct an ever-increasing pupil population. Can they meet these primary demands and still increase their investment in technological equipment? The findings from a 1963-64 follow-up survey[2] of 238 of the 247 districts studied intensively since 1961 indicate not only that they can but also that they did during the three years covered by the project.[3]

Returning to school systems on which previous data were available enabled us to examine change in audiovisual technology—not only the extent and direction of change but the impact of various school district charactertistics on change. If one can assume that growth trends in the country as a whole were similar to those observed among the sample districts, the findings of this intensive follow-up study will provide the planner with useful data on the dynamics of educational change.

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[1] Portions of this chapter were initially published in *Educational Screen and AV Guide* in January 1966.

[2] Thomas Lorimer carried major responsibility for the conduct and analysis of the resurvey.

[3] The sample size decreased from 247 in 1962 to 238 in 1964 for the following reasons:

[a] Six districts were used to pretest the follow-up procedure.

[b] Two of the sample districts did not respond to the 1964 survey.

[c] Two of the sample districts consolidated between 1962 and 1964.

The distribution of the 238 1964 respondents by geographical region and enrollment size category is given in Table A-72.

Change in audiovisual resources from March 1961 to January 1964 and the relationships between certain school district characteristics and change are discussed in this chapter. Factors related to the adoption or nonadoption of five of the newer media and prospects for growth through 1966 are discussed in subsequent chapters.

CHANGE IN AUDIOVISUAL RESOURCES

Overall increases in pupils, teachers, schools, and audiovisual equipment resources are given in Table 26 and detailed by district size in Tables A-73 and A-74. The sample districts responded to a 14 percent increase in pupil population with a 19 percent increase in teachers and a 5 percent increase in schools. During the same three-year period, the amount of audiovisual equipment increased from a minimum of 27 percent (for 16mm projectors) to a maximum of 176 percent (for overhead projectors).

TABLE 26

Increase in Pupils, Teachers, Schools, and Nine Items of Audiovisual Equipment 1961-1964 for 238 Districts

Statistic	*Number in 1961*	*Number in 1964*	*Percent Increase*
Pupils	949,732	1,083,341	14%
Teachers	37,925	45,254	19
Schools	2,096	2,206	5
Audiovisual Equipment			
16mm projector	3,451	4,374	27
Slide-filmstrip projector	3,136	4,024	28
Record player	10,109	13,356	32
Tape recorder	2,440	3,780	55
Opaque projector	1,121	1,492	33
Radio	1,943	2,585	33
Television set	1,068	2,383	123
Overhead projector	437	1,204	176
Language laboratory	91	193	112

The relatively greater expansion of audiovisual resources over that experienced for either pupils or teachers was true for all seven district size categories and all equipment items with two exceptions. Very small school systems (with 150-300 pupils) did not match their population increase with a similar increase in 16mm projectors or television sets (cf. Tables A-73 and A-74).

Perhaps even more significant than the substantial growth in the *amount* of audiovisual equipment available was the increase in the *number of districts* that had each piece of equipment. By 1964 all of the sample districts had 16mm projectors and record players; all but six had slide-filmstrip projectors, and those without a combination machine had either a slide or a filmstrip projector, or both. In addition, all but five districts had tape recorders, and all but twenty-four had opaque projectors. Although television sets and overhead projectors were still found more frequently in the larger school systems, they were available in 40 percent or more of the districts with at least 300 pupils. Language laboratories were also concentrated in the larger systems, but 6 of the 47 districts with fewer than 600 pupils had acquired one of these installations between 1961 and 1964. (Ownership figures for both 1961 and 1964 are detailed by district size in Tables A-75 and A-76.) As a result, all types of audiovisual resources were more evenly distributed among the various enrollment size categories than they had been in 1961.

1961 NEEDS AND INVENTORY INCREASE

The reader will recall that in 1961 each superintendent was asked to estimate the number of additional units of each type of equipment he needed to "serve his present teaching program and enrollment." The question was phrased in this manner in order to obtain a report of realistic need rather than maximum desire, given the best of all possible worlds.

TABLE 27

Comparison of Desired Percentage Increase in Amount of Equipment in 1961 with Actual Percentage Increase Reported in 1964 for 238 Districts

Equipment	*Percent Increase Desired in 1961*	*Percent Increase Reported in 1964*	*Difference*
16mm projector	15%	27%	12%
Slide-filmstrip projector	20	28	8
Record player	15	32	17
Tape recorder	33	55	22
Opaque projector	42	33	− 9
Radio	37	33	− 4
Television set	128	123	− 5
Overhead projector	162	176	14
Language laboratory	182	112	−70

As shown in Table 27, growth in 1964 corresponded quite closely with 1961 needs, not only for the sample districts but for the country as a whole.[4] The largest increases were obtained for overhead projectors, language laboratories, and television sets, but there was a similar correspondence between relative need and relative gain for the other six equipment items.

When the *magnitude* of the percentage increases is compared with those desired three years earlier, we find that the 238 districts had surpassed their 1961 needs for five items (the 16mm projector, slide-filmstrip projector, record player, tape recorder, and overhead projector) but failed to achieve the desired magnitude of increase for the other four items, most notable the language laboratory. Tape recorders or record players may have been substituted for the more expensive equipment in some instances as gains for both of these items were above the 1961 expectations.

RELATIVE INVENTORY INCREASE

On the average, then, there was significant growth in the amount of audiovisual equipment available to the classroom teacher. But averages have a way of obscuring their component parts. School districts are living organisms—they grow; they consolidate; they reorganize. Depending upon the number of pupils, teachers, or schools served in 1964 as against those served in 1961, a school district may buy additional equipment and be *relatively* better off, worse off, or at its original inventory position. Some common denominator is needed to equate the two time periods. Such a measure might be constructed for the student (who is the ultimate consumer); for the teacher (who uses the equipment); or for the school (where the equipment is housed).

The amount of equipment per school has certain advantages for measuring relative change over time. First, data from our 1961 survey suggest that the administrator is acutely conscious of the number of school plants in his district when he plans his equipment purchases. The American ideal of equality of opportunity requires that he provide at least one unit of every essential type of equipment for each of his schools. Second, to build or close a school is a major decision for any school board and is a response to a substantial long-term change in enrollment. Thus, a per school index is less subject to minor fluctuations in enrollment than one based on either teachers or pupils. Therefore, we used change in the amount of equipment per school to measure inventory change over the three-year survey period.

The amount and direction of change was computed for each of the 238 districts by subtracting the number of units per school in 1961 from the number of units per school in 1964, as shown below:

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[4] Cf. Table 5, p. 29.

$$\frac{\begin{array}{c}\textit{1964}\\ \text{Number of Units}\\ \text{of Equipment Item}\end{array}}{\begin{array}{c}\text{Number of}\\ \text{Schools in District}\end{array}} - \frac{\begin{array}{c}\textit{1961}\\ \text{Number of Units}\\ \text{of Equipment Item}\end{array}}{\begin{array}{c}\text{Number of}\\ \text{Schools in District}\end{array}} = \begin{array}{c}\text{Inventory}\\ \text{Change}\end{array}$$

The denominator in each ratio is the total number of schools in the district at that time for all media except the language laboratory; inventory change for these installations was based on the number of secondary schools in the district.

TABLE 28

Change in Number of Units of Audiovisual Equipment per School 1961-1964 for 238 Districts

Equipment	*Percent of Districts Reporting* Increase	*Percent of Districts Reporting* No Change	*Percent of Districts Reporting* Decrease	*Median Increase per School*[a]
16mm projector	62%	25%	13%	0.39
Slide-filmstrip projector	57	28	15	0.44
Record player	71	16	13	1.10
Tape recorder	71	21	9	0.51
Opaque projector	51	34	15	0.24
Radio	41	44	16	0.48
Television set	45	47	8	0.49
Overhead projector	68	27	6	0.39
Language laboratory	31	66	4	0.50[b]

[a] Median increase for districts reporting an increase (not for the total sample of 238 districts).

[b] Calculated on the number of secondary schools rather than the total number of schools in the district.

It is clear from the figures given in Table 28 that the majority of the 238 districts were relatively better off in 1964 for six of the nine media. Inventory losses were concentrated among districts that had added schools without a commensurate increase in the amount of audiovisual equipment, but not all of the growing systems lost ground—73 districts gained schools, but no more than 37 experienced a relative inventory decrease for any item of equipment. There were very few reports of a decrease in the *absolute* amount of equipment, and these reports were limited essentially to radios, the most transient item in the survey.[5]

Systems with fewer than 600 pupils were the most "status quo" districts. Aside from the largest size category where 69 percent of the districts reported relative increases, the language laboratory was the most "status quo" item. Reports of inventory gains for slide-filmstrip projectors, television sets, and opaque projectors varied directly with district size; those for record players, tape recorders, overhead projectors, and 16mm projectors were uniformly high for all districts with 600 or more pupils. (See Table A-77 for the percent of districts reporting inventory increases for each item of equipment in each district size category.)

Overall unit gains were substantial, ranging from a median increase of .24 units per school for opaque projectors to 1.10 units per school for record players. Median rather than mean increase was used as the summary statistic so as not to give exaggerated weight to the relatively small number of districts reporting large increases. Some of the individual gains were quite spectacular: increases of 12, 10, 9, and 7 units per school were reported for tape recorders, record players, television sets, and overhead projectors.

As a result of the general increase in amount of equipment per school, the median inventory *level* shifted upward for all items except radio, where the level remained constant at one unit per school over the three-year period. In 1964, assuming that he had all nine equipment items, the superintendent of the hypothetical median district had one overhead projector for each two schools, seven television sets for each ten schools, two language laboratories for three secondary schools, two opaque projectors for every three schools, one radio in each building, and enough tape recorders, 16mm projectors, slide-filmstrip projectors, and record players to put one unit in every school and multiple units in some, presumably the larger ones.

DISTRICT CHARACTERISTICS AND INVENTORY INCREASE

Any study of a social institution is predicated on the assumption that the structure of the institution influences its functioning. The size of the educational system (e.g., the number of pupils it serves) has been a major and, on occasion, a significant classificatory variable throughout our series of studies of audiovisual programs in the public schools. Let us now consider the relationship between certain other characteristics of the school district as an educational system and change in relative inventory position. Four such structural characteristics were examined in our analysis—type of district, wealth, number of schools, and change in the number of schools.

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[5] Each superintendent was sent a copy of his district's 1961 inventory report and asked to confirm the accuracy of the earlier figures.

Each of these variables is itself related [illegible] size. Districts with large enrollments more often span all twelve [illegible] more schools, and are building schools faster than are districts [illegible] enrollments. The larger systems also have higher pupil-teacher [illegible] they are endeavoring to lower, and spend somewhat less per pupil for instructional materials. But not all districts in the same enrollment size category are alike. Therefore, an examination of the association between some important structural variables and inventory increase may provide useful insights into the kinds of school systems that are most likely to increase their audiovisual inventories.

Type of District

Elementary teachers use all types of audiovisual materials, except language tapes, more frequently than secondary teachers. It seems reasonable to assume that this greater frequency of use will be reflected in the buying habits of districts which have only elementary schools. Contrary to such an expectation and to the implementation of the DAVI guidelines (7), there was a lower incidence of increase in the amount of equipment per school among elementary districts for all items except radio. Since the number of elementary districts in the sample is small, 32, no strong conclusions can be drawn from these findings (presented in Table A-78), but some possible implications of the data may be suggested here. Perhaps a significant number of the elementary systems, particularly the smaller ones, had already achieved what they considered to be an adequate inventory level for each item. Certainly, one or two units of equipment go farther in a 10- to 15-teacher school (the typical size range for an elementary district) than they do in a 50-teacher high school.

Instructional Materials Expenditure

Wealthy districts, as measured by the amount of "free" wealth available for all types of instructional materials, including audiovisual media, should be able to expand their supply of equipment more rapidly than less affluent systems.[6] The amount of money spent for each student for instructional materials was computed on the basis of instructional materials expenditures for 1959-

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[6] No measure of school district wealth is completely satisfactory. Total expenditure per pupil may be relatively high or low because of a large or small amount of capital outlay and debt service for construction. Current expenditure per pupil is directly related to the district salary structure, the number of pupils enrolled, and transportation costs. The instructional materials budget is the most flexible of the three. Districts will spend more or less on the tools of instruction, depending upon how much the taxpayers are willing to provide above and beyond the basic necessities of buildings, teachers, and transportation.

60, the latest year for which we had complete data on both expenditures and average daily attendance. Assuming that the sample districts continued to spend approximately the same amount per pupil during the three-year survey period, these figures can serve as a rough measure of the funds available for expansion of audiovisual resources.

We expected the relationship between expenditures for instructional materials and inventory increases to be a direct one: the more a district spends, the higher the probability of increase in the amount of audiovisual equipment per school. Again, the expectations were not fulfilled. The data (given in Table A-79) support the hypothesis only for language laboratories, and then not too strongly. Perhaps we were testing the wrong hypothesis. A strong negative association would fit the saturation argument; e.g., districts that had spent 20 or more dollars per pupil a year for a number of years might be expected to have arrived at optimum equipment-school ratios. The data suggest that this argument may have some validity, especially for record players, radios, and television sets.

However, the general independence between instructional materials expenditures and inventory increase remains a puzzle. Perhaps other funds (e.g., bond money) are used for equipment purchases in districts that have low current expenditure ratios. Perhaps the instructional materials budget varies more widely from year to year than we had supposed. However, an analysis of the relationships between total current expenditure per pupil (a more stable ratio) and increase in audiovisual inventories yielded results similar to those obtained with the instructional materials expenditure measure.

Number of Schools

The association between the number of schools in the system and inventory increase was the most striking of all the relationships between district characteristics and expansion of audiovisual resources. As shown in Table 29, relative inventory increase was positively related with the number of schools in the system. The only reversal in the table is for language laboratories in the very large districts. That at least 70 percent of the systems with twelve or more schools reported increases for seven of the nine items is noteworthy. These districts were concentrated in the three largest enrollment categories which already had both the largest amount of standard equipment and the highest incidence of ownership of the newer media.

On the other hand, less than 50 percent of the one or two school districts reported increases for any of the nine items. Failure to buy more of the "older media" might be explained by the saturation or optimum ratio argument. One or two units of equipment may be sufficient for a small district. The same line

TABLE 29

Number of Schools and
Increase in Number of Units of Audiovisual Equipment per School
1961-1964 for 238 Districts

Equipment	*Percent Reporting Increase When Number of Schools Was* 1-2	3-5	6-11	12-44
Number of Districts	51	61	65	61
16mm projector	*29%*	*61%*	*72%*	*80%*
Slide-filmstrip projector	*27*	*56*	*66*	*72*
Record player	*49*	*71*	*75*	*85*
Tape recorder	*41*	*72*	*77*	*87*
Opaque projector	*20*	*48*	*60*	*72*
Radio	*22*	*30*	*49*	*59*
Television set	*18*	*31*	*54*	*72*
Overhead projector	*29*	*74*	*80*	*80*
Language laboratory (secondary schools only)	*26*	*27*	*42*	*34*

of reasoning cannot be used, however, to explain the failure to acquire television sets, language laboratories, or overhead projectors as rapidly as systems with more schools—unless none at all can be considered optimum. Rather, small districts may find certain technological devices either inappropriate (e.g., language laboratories) or inaccessible (e.g., television), given their curriculum needs and geographic location.

Change in Number of Schools

The results of the analysis of the association between gain in number of schools and inventory increase, given in Table 30, are somewhat surprising. We expected that growth in the amount of equipment available *per school* might be limited by the cost of new construction.[7] Contrary to expectations, the majority of the districts that built schools improved their relative inventory position for all items but the radio and the language laboratory.

Indeed, school construction was *positively* related to inventory increase for television sets and overhead projectors. The expected negative association was found only for slide-filmstrip projectors and record players. Perhaps the construction of a new school environment encourages the utilization of new instructional techniques. And, not to be overlooked, if the cost of the equipment

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[7] Only 2 of the 73 districts that gained schools did so through annexation.

TABLE 30

Change in Number of Schools and
Increase in Number of Units of Audiovisual Equipment per School
1961-1964 for 216 Districts[a]

Equipment	*Percent Reporting Increase When* *No Change in Number of Schools*	*Gained One School*	*Gained Two or More Schools*
Number of Districts	143	35	38
16mm projector	59%	66%	50%
Slide-filmstrip projector	54	51	50
Record player	73	63	55
Tape recorder	67	71	71
Opaque projector	48	46	55
Radio	35	43	53
Television set	37	49	68
Overhead projector	64	69	76
Language laboratory (secondary schools only)	32	44	43

[a] Twenty-two districts that lost schools through district reorganization and consequently had an automatic increase in amount of equipment per school are not included in this analysis.

is included in the bond issue for the new school, equipment expansion can take place without draining current operating funds.

Sociologists have long theorized that new techniques are adopted most rapidly in complex societies with expanding populations. The relationships between audiovisual inventory increases (particularly for the newer media) and the variety of educational offerings, the number of schools in the system, and the amount of new school construction support this contention. The predictability of the future in a small district with a relatively restricted curriculum and a stable or declining enrollment may be a greater hindrance to increased use of new teaching techniques than lack of money or size per se.

Recent changes in school board philosophy, bond referenda failures, and questioning of rising school costs in a number of built-up suburban areas suggest that even a large and comparatively wealthy school system may find it increasingly difficult to justify expenditures for new programs when the student population stabilizes. The expectation that "we will institute the educational innovations we want but cannot afford now *after* we build the schools to house the children" may not be realized as often in practice as we blithely hope. If change breeds change, stability may well breed conservatism.

PROGRAM ADMINISTRATION, PLANS, AND INVENTORY INCREASE

The discussion to this point has been concerned with the relationship between general characteristics of the school system and increases in audiovisual equipment inventories. But each of the sample districts already had some kind of audiovisual program in 1961. A positive, neutral, or negative orientation toward the use of projected or recorded materials in the classroom should influence the pattern of inventory growth. So, too, should the amount of equipment on hand.

Audiovisual Administration

One measure of the "audiovisual mindedness" of a district may be the importance assigned to the administration of the program. If this supposition is correct, there should be more inventory growth among school systems in which the district-level coordinator is a member of the central administrative staff than where each school is responsible for its own program. Among systems with district-level coordination, there should be more interest in the program, and hence greater inventory increases, when the administrator is a trained

TABLE 31

1964 Position of District-Level Audiovisual Coordinator and Increase in Number of Units of Audiovisual Equipment per School 1961-1964 for 214 Districts[a]

	Percent Reporting Increase When AV Coordinator Was			
Equipment	*Audiovisual Director*	*Other Administrative Personnel*	*Superintendent*	*School Personnel*
Number of Districts	45	60	55	54
16mm projector	78%	77%	40%	48%
Slide-filmstrip projector	73	67	54	35
Record player	89	77	60	56
Tape recorder	89	83	62	46
Opaque projector	55	70	40	37
Radio	56	52	22	39
Television set	64	60	27	35
Overhead projector	91	72	56	50
Language laboratory (secondary schools only)	42	30	25	40

[a] Twenty-four districts did not give the position of the district-level audiovisual coordinator in 1964.

audiovisual director rather than a superintendent with many varied and time-consuming responsibilities or a curriculum supervisor who may not have the time or inclination to become well versed in a variety of audiovisual techniques.

A recent survey by Tanzman and Brown (34) casts doubt on the expectation that the largest inventory gains will take place among districts with audiovisual directors. They found that the amount of money spent for equipment declined when a district had a part-time audiovisual director and was even lower when the district had a full-time director. The two authors suggest two possible explanations for this phenomenon: either the audiovisual director is not playing a proper role in the selection and promotion of the use of audiovisual materials, or his district may have acted sooner, made purchases earlier, and may now just be filling in the weak spots.

The relationships between inventory increases and position of the district coordinator, shown in Table 31, indicate that the audiovisual director is fulfilling his role not only in the promotion of the newer media but in the use of the standard equipment. Inventory increases for all media except the opaque projector were most frequently reported by districts with an audiovisual director. These districts may have acted sooner, but they are still acting. In general, the pattern of relationships in the table is in agreement with the hypothesis that inventory increases are most likely when there is centralization and specialization in administration of the audiovisual program.

Plans for Media Use

Projected plans are another measure of attitudes toward audiovisual technology. In 1961 each superintendent had been asked to project his plans for use of each of the major audiovisual materials for the "next two years." To simplify the analysis, the responses were reduced to a "continue present use" vs. "increase use" dichotomy. "Increase use" was defined as either "planning to try" or "planning to emphasize" the use of an audiovisual technique. Respondents who checked "continue present use," "no plans to try," or did not answer the question were considered as desiring to maintain the status quo.

We expected that plans would be a good predictor of inventory increase, and they were. As shown in Table 32, in every instance there is a higher incidence of inventory increase among the planners than among the status quo group. However, more than half of the latter districts increased their inventories of five of the nine items! These findings are rather perplexing. We can understand how an educator may plan to make more intensive use of what he has without buying any more, but why should so many districts increase their school inventories without any apparent prior intentions to increase the use of that equipment? Perhaps the general public interest in educational technology and increased federal support for equipment purchases persuaded a number of the administrators to change their plans.

TABLE 32

1961 Plans for Future Use and Increase in Number of Units of Audiovisual Equipment per School 1961-1964 for 238 Districts

Equipment	*Plan To Increase Use* *Number*	*Plan To Increase Use* *Percent Which Increased Inventory*	*Plan Status Quo* *Number*	*Plan Status Quo* *Percent Which Increased Inventory*
16mm projector	63	*73%*	175	*58%*
Slide-filmstrip projector	79	*58*	159	*56*
Record player	85	*78*	153	*68*
Tape recorder	85	*80*	153	*65*
Opaque projector	91	*54*	147	*50*
Radio	30	*47*	208	*40*
Television set	71	*56*	167	*40*
Overhead projector	104	*73*	134	*63*
Language laboratory (secondary schools only)	124	*43*	82	*20*

Pursuing further the relationship between plans and inventory increase, we analyzed the association between plans and increase separately for those districts that did and did not have the equipment in 1961 for the five items (opaque projectors, radios, television sets, overhead projectors, and language laboratories) where there were enough "have not" districts to justify the more detailed analysis. Again, the results, given in Table A-80, were somewhat surprising. Districts that had the equipment in 1961 were *more* likely to increase the relative amount of that equipment, regardless of their plans, for all items except the language laboratory.

The exception is understandable; such major educational changes as electronic language training are likely to be programed a year or two in advance. The unexpected result for the other four items cannot be explained on the basis of expense or major changes in educational philosophy. One receiver or projector is all that is needed for a "have not" district to show an inventory increase, yet these systems did not purchase any of the four general-purpose items as frequently as districts that already had them. Rather, the positive association between current ownership and inventory increase supports Finn, Perrin, and Campion's argument that a certain level of technological sophistication is necessary to create the aspiration and impetus for further technological growth (8).

INVENTORY LEVEL AND INVENTORY INCREASE

If experience rather than deprivation is the generator of inventory increase, does more experience continue to beget more equipment until the limit of one unit per classroom is reached? Or is there an earlier saturation point, or optimum level, such as one, two, or three items per school? If so, districts that had reached such a level in 1961 might be expected to report little or no inventory increase in 1964. In view of the dynamic state of audiovisual technology and the possibility that standards may shift as experience with a medium accumulates, either theory may apply, depending upon the item under investigation.

Inventory increase was related to 1961 inventory level by means of regression analysis. Regression lines and equations for each of the nine media are shown in Figures 1 through 4. (The correlation coefficients and standard errors of estimate are given in Table A-81.) For three of the media (16mm projectors, television sets, and overhead projectors), there was a significant *positive* correlation between 1961 inventory levels and inventory increase. For two of the media (opaque projectors and language laboratories), there was a sig-

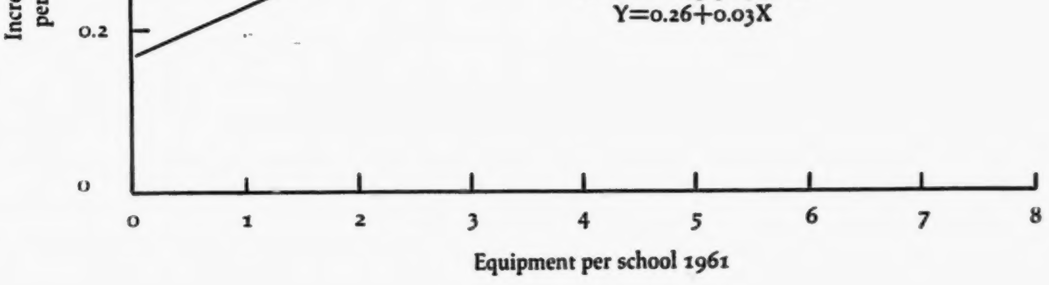

FIGURE 1

Relation Between 1961 Inventory Level and Inventory Increase 1961-1964 for 16mm Projectors and Slide-Filmstrip Projectors

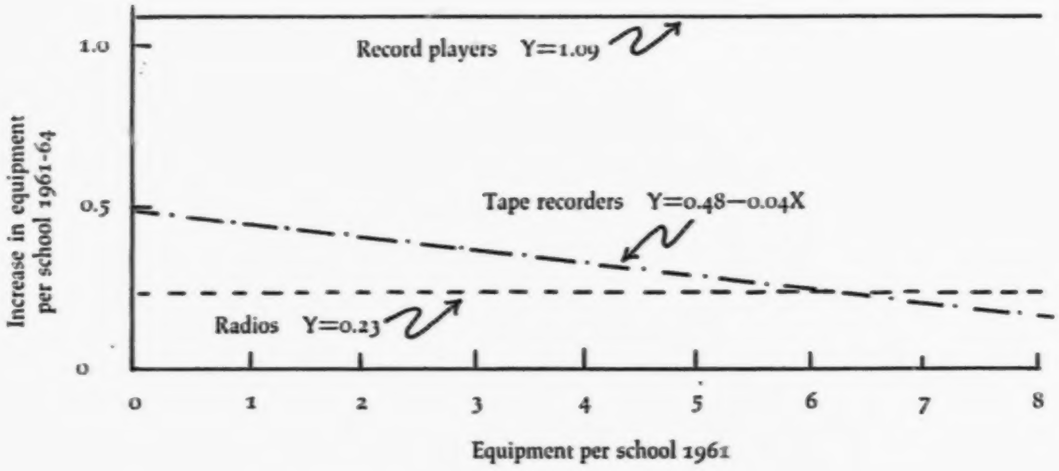

FIGURE 2

Relation Between 1961 Inventory Level and Inventory Increase 1961-1964 for Record Players, Tape Recorders, and Radios

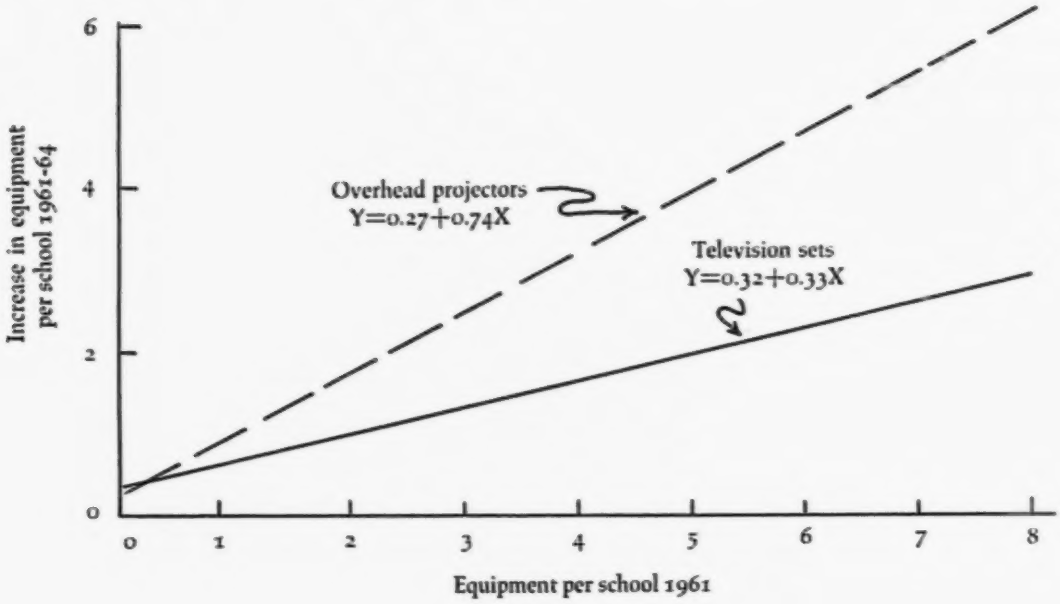

FIGURE 3

Relation Between 1961 Inventory Level and Inventory Increase 1961-1964 for Overhead Projectors and Television Sets

nificant *negative* correlation between the two variables, attesting to the supposition that inventories of these items reach an optimum level at about one per school.

The nonsignificant correlations are perhaps the most interesting of all. School administrators acquired on the average slightly more than one record

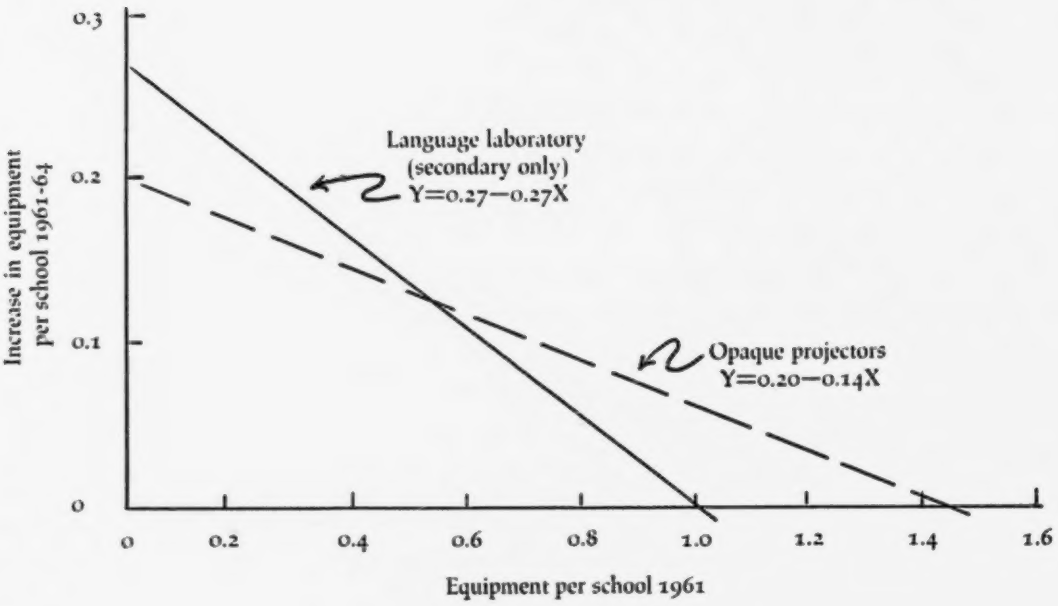

FIGURE 4

Relation Between 1961 Inventory Level
and Inventory Increase 1961-1964
for Language Laboratories (Secondary Only)
and Opaque Projectors

player, one-half of a tape recorder, and one-quarter of a slide-filmstrip projector and radio per school from 1961-64 almost independently of beginning inventory levels. These items are the least expensive, the easiest to operate, and the most classroom oriented of all of the equipment studied, and may indeed not reach a saturation point until there is one for every classroom.

Growth potentials for television sets and overhead projectors are explosive. Using the regression equations to illustrate the point, the "average" superintendent with one television set per school in 1961 added 0.6 of a unit per school, whereas the "average" superintendent with three television sets per school increased this inventory by 1.3 units per school. Similarly, if he had one overhead projector per school, he was likely to add one more for each school, but if he had two overhead projectors per school, he was likely to add 1.8 units per school.[8]

CHANGE IN ASPIRATIONS

Impressive as these inventory increases were, they were not large enough to fulfill the expressed educational needs in 1964. No sooner do school districts

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[8] It must not be overlooked that predictions derived from regression equations are subject to error. How much error was involved in each measure, for each type of equipment, is shown in Table A-81, which the reader is urged to consult in this context.

"catch up" with where they should have been last year, or the year before, than they raise their standards. A tendency to want more equipment was evident for all district size categories except the very smallest and for all media except the opaque projector.

Let us assume that the number of units owned plus the number of units needed equals the "ideal" amount of equipment necessary to meet instructional goals at any point in time. This sum can then be used in conjunction with other sums—total teachers, total pupils, or total schools—to arrive at an ideal amount of equipment per school or an ideal number of teachers or pupils per unit of equipment. A comparison of such an ideal ratio with a similar ratio based on actual inventories should indicate how successful school systems have been in achieving their goals.

Reported and ideal number of teachers per unit of equipment for both 1961 and 1964 are shown in Table 33 (and by district size in Tables A-82 through A-85) for all media except the language laboratory.

TABLE 33

Change in Reported and "Ideal" Number of Teachers per Unit of Equipment 1961-1964 for 238 Districts

	Teachers per Unit 1961		*Teachers per Unit 1964*	
Equipment	*Reported*	*Ideal*[a]	*Reported*	*Ideal*[a]
16mm projector	11	10	10	9
Slide-filmstrip projector	12	10	11	9
Record player	4	3	3	3
Tape recorder	16	12	12	9
Opaque projector	34	24	30	24
Radio	20	14	18	12
Television set	36	16	19	10
Overhead projector	87	33	38	15

[a] "Ideal" is operationally defined as the number of teachers/number of units owned + number of additional units needed.

Reported teacher-equipment ratios were reduced during the three-year period for all types of equipment. These reductions varied from a modest .4 of a teacher for each record player to a substantial 49 teachers for each overhead projector. With minor variations for opaque projectors and radios, there was a reduction in teacher-equipment ratios for all media in all but the smallest districts. In these latter districts (which have 150-300 students), teaching staffs had grown without a parallel increase in equipment for four items—the

16mm projector, slide-filmstrip projector, record player, and, most notably, the television set.

Actual teacher-equipment ratios in 1964 approached ideal teacher-equipment ratios for 1961. But in the interim, the ideals had changed; ratios which would have been close to ideal in 1961 were not good enough by 1964 standards, with the possible exception of the record player. The most striking change took place in the ideal for the overhead projector which increased from one unit for every 33 teachers in 1961 to one unit for every 15 teachers in 1964.

1964 EQUIPMENT STANDARDS

Increasing similarity between both actual and ideal teacher-equipment ratios across district size categories indicates an emerging consensus about equipment standards. If we assume that each school in the system should have ready access to every appropriate piece of equipment and that the amount of equipment in the school should be increased when the number of teachers and pupils warrants multiple units, these standards may be used to judge the adequacy of the audiovisual equipment resources in any district.

To illustrate the application of the survey standards, the model school district described in Table 34 was equipped according to the teacher-equipment ratios desired by the survey respondents. The system serves 4,800 pupils

TABLE 34

"Ideal" Distribution of Audiovisual Equipment for a Model School District of 4,800 Pupils[a]

(6 elementary schools, 2 junior high schools, 1 senior high school)

Equipment	*Total in District*	*Per Each Elementary*	*Per Each Junior High*	*Senior High*
16mm projector	22	2	2	6
Slide-filmstrip projector	22	2	2	6
Record player	69	8	6	9
Tape recorder	25	2	3	7
Opaque projector	10	1	1	2
Radio	15	1	2	5
Television set	21	2	2	5
Overhead projector	14	1	2	4
Language laboratory	1	—	—	1

[a] Constructed from superintendents' "ideal" ratio of teachers per unit of equipment for 238 districts. Record player distribution adjusted to place more units in elementary schools in line with current practice.

housed in six elementary schools, two junior high schools, and one senior high school. Since it is a model district, all of the elementary schools are equal in size, with 400 pupils and 15 teachers each; each junior high school has 600 pupils and 25 teachers; the comprehensive senior high school has 1,200 students and 60 teachers. There are 199 pieces of audiovisual equipment distributed throughout the district in such a manner as to approximate the ideal teacher-equipment ratio *in each school* with two exceptions. Record players were concentrated more heavily in the elementary schools in line with current practice, and the language laboratory was available only in the senior high school. The two junior high schools in the model were not large enough to justify this installation.[9]

The empirically derived standards are equal to, or exceed, the guidelines for a basic high school program developed by Faris and Sherman and adopted by DAVI and the Association of Chief State School Audiovisual Officers in October and December of 1965 (7) for all items except the overhead projector. The adopted equipment guidelines would put 15 overhead projectors in a 60-teacher high school, whereas the survey respondents would put only 4. The sample standards fail to meet the suggested guidelines for a basic elementary program for record players, slide-filmstrip projectors, overhead projectors, television sets, and tape recorders. Meeting the DAVI standards for a 15-teacher elementary school would mean that each school in the model should have 10 to 12 record players, 5 slide-filmstrip projectors, 4 overhead projectors, 3 tape recorders, and at least 3 television sets, if programs are available. The Faris-Sherman standards are in line with the greater use of audiovisual materials in elementary education. The empirical standards would continue to concentrate much of the equipment in the high school.

In summary, the growth patterns from 1961 to 1964 are an extension of past growth curves for all media except the language laboratory. The slowing down of the growth curve for the opaque projector (another rather specialized piece of equipment) had been foreseen by Finn, Perrin, and Campion in 1961 (8, pp. 67-72). The rapid expansion of inventories of television sets and overhead projectors and the steady demand for the other five general-purpose items indicate that even reasonably well-equipped districts had not yet reached an optimum inventory level for any of these items.

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[9] A complete language laboratory is essentially a special kind of classroom. Either the expense of the installation or the limitation of its use to intensive instruction in foreign languages has kept the language laboratory in the secondary schools. Analysis of the patterns of ownership and need reported in this survey indicate that the 1964 ideal was one such installation for every senior high school. Whether or not a junior high school should have a language laboratory depended upon the grade span, size, and language program provided by the school system.

6. Acceptance of the Newer Media

Advocates of educational innovation need to study not only social and psychological factors which facilitate or inhibit change but also the channels of information and pressure which are given credence by target systems. Knowledge of the reasons administrators are most likely to give in support of their adoption or nonadoption of a new technique can increase the effectiveness of the strategies employed by the change agent. For several provocative discussions of strategies for educational change, see Brickell (1), Meierhenry (28), Miles (29), and the papers from The Ohio State University Conference on Strategies for Educational Change of November 1965 (41).

Five audiovisual techniques introduced into public education essentially since 1950 were included in this survey: instructional television,[1] overhead projectors, language laboratories, programed texts, and teaching machines. As shown in Table 35, the survey period was a time of rapid growth in classroom use of these five media. By 1964 the slowest diffusing innovation (the teaching machine) was used by 19 percent of the sample districts, and the most widely diffused innovation (the overhead projector) was used by 79 percent. The majority of the adopters seem to be satisfied with the classroom utility of the new techniques. Reports of discontinued use were few and confined mainly to instructional television. Reports of experimental use represented an important proportion of adoptions only for programed materials.

[1] Defined as a regular program of classroom instruction in which a complete course or an integral part of a course is presented via television. The number of districts offering such instruction in both 1961 and 1964 is considerably smaller than the number of districts that owned one or more television sets in either year.

TABLE 35

Classroom Use of Five Newer Media
1961-1964 for 238 Districts

	Percent of Districts Reporting				
Media	*Used Since 1961*	*In Use by 1964*	*Experimental Use in 1964*	*Discontinued Use by 1964*[a]	*No Use by 1964*
Television instruction	18%	16%	5%	4%	57%
Overhead projector	47	32	—	—	21
Language laboratory	27	24	<1	<1	48
Programed text	<1	18	14	1	66
Teaching machine	1	13	6	—	81

[a] Districts which had discontinued use of a medium were considered as nonadopters in all analyses of reasons for adoption or nonadoption of the various techniques.

Taking as a starting point Brickell's 1961 study of the process of educational change in New York State (1), a check list of channels of information and influence that might convince an administrator of the value of a new instructional technique was included in the survey questionnaire. A similar list of conditions that might discourage use of the newer media was developed from the problems cited as deterrents to effective use of audiovisual materials in the 1961 and 1962 Bureau of Social Science Research surveys. Each superintendent was asked first to check whether or not his district had adopted any of the five media in question and then to select the three items from the appropriate list that had been most influential in his decision either to encourage or not to encourage the use of a specific technique.

The two check lists are somewhat different in orientation and emphasis. (See Questions 9 and 10, Follow-up Questionnaire, Appendix B, for the list of factors and directions used.) Assuming that anyone who has adopted a technique believes that the medium itself has merit, the "pro" statements are concerned with *how* the educator became convinced of its value, not *why*. The question became: Which avenue of knowledge was most efficacious—direct personal experience through use or observation; indirect personal experience through articles, reports, and speeches; or compliance with the requests of other interested parties within the school system? Conversely, a nonadopter may be convinced of the value of a technique but be unable to introduce it because of monetary or administrative problems. Therefore, the list of factors which might discourage innovation covered several dimensions: inadequacies of the medium itself; inapplicability of the technique to "my" situation; lack of available money; or administrative difficulties encountered in trying to use the medium.

The objective of this section of the report is to ascertain which of the suggested reasons were most likely to be used to justify various administrative decisions. Do certain positive or negative factors consistently stand out as influential in the decision-making process regardless of the medium, or are there media-related differences in the pattern of responses? As a technique becomes more widely accepted, do reasons cited for its adoption change? Does a respondent in a system that was unable to carry out plans for introducing a new technique explain that nonadoption in a different manner than a respondent representing a system that had reported no intentions to adopt the technique?

REASONS FOR ADOPTION OF THE NEWER MEDIA

Several points can be made from the frequency with which each adoption factor is cited in Table 36. There was no one channel of influence leading to the adoption of all five media. In fact, the most consistent findings are that school boards and parents have very little impact upon the administrator's decision to encourage the use of a new instructional approach. In general, requests from teachers, demonstrations, and observations of operating programs are more effective than technical reports and papers at professional meetings.

If we look primarily at the two most frequently cited reasons for adoption of each of the five media, we find that: teacher requests were given credit as an important factor in the introduction of language laboratories, overhead projectors, and programed texts; observation of an existing program, the most influential factor in Brickell's study, led to the introduction of instructional television and laboratory language training; demonstrations at professional meetings weighed heavily in the decision to adopt teaching machines and overhead projectors; and journal articles received a vote of confidence as contributing to the diffusion of programed texts.

The order in which the various factors were chosen as influential in the decision to adopt a technique was similar across district size despite a higher frequency of adoption in the larger districts. Observation of a program in action was consistently in first place for instructional television, as were demonstrations for the overhead. Direct observation and teacher requests were similarly rated by all enrollment groups as the two major factors for language laboratories. There was some indication that administrators in larger districts, particularly those with 12,000-24,999 pupils, put more stress on research reports about programed learning than did their colleagues in small systems.

TABLE 36

Reasons for Adoption of Five Newer Media for Districts with Medium in 1964

	Percent Citing Reason as Factor in Adoption				
Reasons for Adoption	*Television Instruction*	*Overhead Projector*	*Language Laboratory*	*Programed Text*	*Teaching Machine*
Number of Districts with Medium	94	188	123	77	46
Personal experience with technique	28%	42%	15%	25%	15%
Observation of program in action	50	31	48	25	24
Talk with neighboring superintendents	12	5	12	6	11
Demonstrations at professional meetings	39	60	28	35	52
Demonstrations by manufacturer	3	38	20	23	39
Articles in professional journals	29	25	41	44	33
Technical or research reports	24	7	30	30	11
Speeches at professional meetings	21	11	14	18	22
Requests from teachers	29	44	49	42	26
Requests from administrators	21	13	21	21	11
Requests from school board	6	3	6	—	—
Requests from parents	2	2	2	1	—
No reasons given	4	4	1	4	13

However, the small number of adopters in any size category makes this apparent difference a tenuous one. (See Table A-86 for frequency of adoption by district size.)

TIME OF ADOPTION

Cultural diffusion is presumed to radiate outward from the most cosmopolitan centers, or persons, to the more deliberate and traditional. According to this theory, innovators and, to a lesser degree, early adopters derive their ideas from sources external to their immediate environment. Later adopters rely more heavily on peer group evaluation and experience (cf. Rogers [33]). If these propositions are true, they should be reflected in a differential emphasis on various channels of information among early and later adopters within this sample of school districts. A district that was using a technique in 1961 was considered an early adopter, whereas a district that had introduced a technique after 1961 was considered a later adopter.[2] A comparison between the two groups was made for three of the newer media—instructional television, the overhead projector, and the language laboratory. Programed texts and teaching machines were excluded from the analysis as only three respondents reported the use of either form of programed learning in 1961.

Applying the propositions of general diffusion theory to the questionnaire items, we would expect that early adopters would put relatively more emphasis on technical reports and direct personal experience and that later adopters would put relatively more credence in their neighbors' experience and their

TABLE 37

Time of Adoption and Reasons for Adoption of Three Newer Media[a]

	Percent of Districts Reporting Reason					
	Television Instruction		*Overhead Projector*		*Language Laboratory*	
Reasons for Adoption	*Used in 1961*	*Adopted by 1964*	*Used in 1961*	*Adopted by 1964*	*Used in 1961*	*Adopted by 1964*
Number of Districts	44	50	111	77	65	58
Personal experience with technique	20%	34%	47%	33%	15%	16%
Observation of program in action	50	50	30	32	54	41
Talk with neighboring superintendents	14	10	3	9	8	17
Demonstrations at professional meetings	30	48	48	65	26	31
Demonstrations by manufacturer	7	—	39	38	14	28
Articles in professional journals	32	26	25	25	46	34
Technical or research reports	25	24	8	6	29	31
Speeches at professional meetings	20	22	10	13	12	16
Requests from teachers	20	36	45	43	46	52
Requests from administrators	27	16	13	13	22	21
Requests from school board	9	4	3	4	8	5
Requests from parents	4	—	2	1	3	2
No reasons given	4	4	4	3	2	—

[a] Programed texts and teaching machines are excluded from this analysis as only three districts reported the use of teaching machines in 1961 and only one the use of programed texts.

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[2] Unfortunately the true "innovators" could not be identified.

teachers' judgments. The data shown in Table 37 only partially support such a conclusion. Personal experience with the technique was characteristic of early adopters of the overhead, but of later adopters of instructional television, and characteristic of neither group for language laboratories. Although early adopters are somewhat more cognizant of journal articles about language laboratories and instructional television, there is no difference between the two groups for any of the three media in the amount of importance they attribute to technical reports or speeches at professional meetings. Experience in neighboring districts assumes somewhat more importance for later adopters of overhead projectors and language laboratories but is not a major factor in the adoption decision for either group. Administrative requests figured more prominently than teacher requests in the early adoption of instructional television, but teacher requests were cited with almost equal frequency as a major factor in adoption by both groups for the other two media.

REASONS FOR NONADOPTION OF THE NEWER MEDIA

Turning to the other side of the picture, skepticism about the usefulness of a technique or of the ability of the classroom teacher to employ it effectively appear to be more important deterrents to adoption than lack of money or administrative problems. As shown in Table 38, questions about the value of a technique per se or its instructional value in relation to its cost were major obstacles to introduction of each of the five media. Lack of enough teachers trained to use the technique effectively was a frequent justification for nonadoption of four of the five media.[3] Again, general community opinion, as represented by the school board or parents, was not an important factor in shaping the superintendent's decision to try a new technique.

A "wait-and-see" attitude was characteristic of nonadopters for both forms of programed learning. Both the administrator and the teacher wanted more evidence of the value of this instructional approach. Doubts about whether the results achieved justified the expense were reported most frequently for the more complex and expensive innovations (the language laboratory, instructional television, and the teaching machine). Failure to introduce the overhead projector was more frequently attributed to a shortage of money than to any presumed inadequacy of the medium itself. This item apparently is most vulnerable when economies must be made to provide for salary raises or new buildings.

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[3] One wonders if there is a presumption that the classroom teacher is less actively involved with television instruction. Although the data do not warrant developing the point further in this context, the conception of each of the new media as an active or passive teaching device vis-à-vis the classroom teacher is worth more systematic study.

TABLE 38

Reasons for Nonadoption of Five Newer Media for Districts Without Medium in 1964

	Percent Citing Reason as Factor in Nonadoption				
Reasons for Nonadoption	*Television Instruction*	*Overhead Projector*	*Language Laboratory*	*Programed Text*	*Teaching Machine*
Number of Districts Without Medium	144	50	115	161	192
Building program takes priority	15%	24%	19%	9%	9%
Salary raises take priority	13	34	22	11	11
Use requires extensive classroom remodeling	10	6	25	1	2
System too small to justify use	24	14	19	13	12
General lack of money	6	12	5	2	2
Materials available do not fit curriculum well	10	6	5	9	7
Preparation of materials takes too much of teachers' time	1	14	6	2	5
Too few teachers trained to use technique	21	34	36	42	33
Too difficult to schedule use of equipment	12	6	3	2	2
Technique too expensive for results achieved	34	22	38	22	34
Too few materials available to use with medium	17	6	3	17	18
Alternative teaching methods just as good or better	12	20	10	29	31
Need more evidence of value of technique	32	18	24	60	56
Teachers not convinced of value	11	18	14	32	26
School board not convinced of value	10	10	10	7	7
Parents not convinced of value	1	—	—	—	7
Use in neighboring districts has not been too successful	5	4	3	2	2
No reasons given	8	—	10	4	6

There was little variation in the significance attached to each of the nonadoption factors by district size except for the fact that administrators in six of the seventeen very small districts (with 150-300 pupils) considered their systems to be "too small" to profit from the adoption of *any* of the five media.

A desire to see more evidence of the value of a new approach, particularly one which may require a reorientation of one's educational philosophy, is understandable and to be expected. The consistent complaint that too few teachers are trained to use the new techniques effectively has important implications for the diffusion of educational innovations. New teachers may acquire the requisite skills in college, but where will the practicing teacher learn the necessary competencies? Many of the smaller school systems are not equipped to train their own faculties. Can enough teachers be induced to attend intensive summer workshops or media institutes to speed the process of diffusion?

PLANS STATUS AND REASONS FOR ADOPTION OR NONADOPTION

It is clear from Table 39 that many districts did not carry out their 1961 plans. Approximately 60 percent of the systems introduced overhead projectors regardless of earlier plans, whereas teaching machines had not found wide acceptance whatever the initial intention. Although plans were more directly related to adoption of television instruction, language laboratories, and programed texts, a sizable number of districts acted contrary to their 1961 expectations with regard to these three media.

TABLE 39

1961 Plans for Introduction of Five Newer Media
and Adoption of Each Medium by 1964
for Districts Without the Medium in 1961

		Planned To Introduce 1961-1964		*No Plan To Introduce 1961-1964*	
Media	*Number Without Medium in 1961*	*Number*	*Percent Adopted*	*Number*	*Percent Adopted*
Television instruction	194	56	43%	138	19%
Overhead projector	127	52	65	75	57
Language laboratory	172	97	47	75	16
Programed text	237	81[a]	46	156	25
Teaching machine	235	81[a]	22	154	16

[a] The 1961 questionnaire asked only for plans for teaching machines; the assumption was made that intentions at that time covered both forms of programed learning.

Lack of perfect correspondence between plans and introduction of a new technique allowed us to investigate whether districts that did not realize their original intentions were influenced by different factors than those that fulfilled their 1961 goals. (Relationships between plans and reasons for adoption are given in Table A-87; relationships between plans and reasons for nonadoption are given in Table A-88.)

Why did some potential nonadopters change their plans and introduce one or more of the newer media? Although both "mind changers" and "plans realizers" credited the observation of an actual or simulated program with influencing their decision to adopt a medium, the mind changers put more emphasis on faculty and administrative requests than did the plans realizers. The substitution of the opinions of others for one's own experience was particularly important for instructional television, overhead projectors, and programed texts. In this instance, the mind changers behave according to the expectations of diffusion theory.

There were surprisingly few differences between the two planning groups in the importance attached to various nonadoption factors. Some potential adopters changed their plans because of the need to put money into new schools rather than television equipment or language laboratories. Others changed their plans because of scheduling problems and lack of materials. On the other hand, initial nonadopters more often used smallness as a justification for the continuing decision not to adopt new techniques. However, both planning groups stressed essentially the same reasons for nonadoption of a new technique: they wanted more evidence of its value; it was too expensive for the results achieved; alternative methods were as good; or few teachers were trained to use it effectively. Questions about the utility of a medium dulled an original enthusiasm as well as reinforced a preexisting doubt. The survey findings suggest that promoters of educational change must continue to demonstrate the efficacy of proposed innovations to their friends as well as to their critics.

AREAS OF MOST EFFECTIVE USE OF OLD AND NEW MEDIA

One purpose of this study was to obtain the superintendent's judgment of the subject areas of most effective use for both old and new media. Each administrator was asked to report the grade levels and subjects in which the teachers in his district had been able to use effectively each of the available audiovisual tools. As shown in Tables 40 and 41, administrative judgments of the curriculum areas in which there was most effective use of the standard media agreed quite closely with the relative frequency of use of each of these media in the different subject categories for both elementary and second-

TABLE 40

Subject Location of Most Effective Use of Eleven Audiovisual Media in Elementary Education

Media	*Number of Districts with Medium*	*Percent Reporting Effective Use by Elementary Teachers in*								
		Science	*Mathematics*	*Social Studies*	*English*	*Fine Arts*	*Foreign Language*	*Applied Arts*	*All Subjects*	*No Effective Use*
16mm films	232[a]	27%	4%	28%	5%	> 1%	—%	4%	43%	3%
Filmstrips	232	29	12	26	15	> 1	2	4	48	3
Records	232	2	1	9	21	49	10	12	26	4
Tapes	227	1	1	7	32	16	16	2	13	6
Opaque projector	208	15	5	22	11	7	> 1	2	31	10
Radio	178	4	—	15	4	10	—	> 1	30	33
Television instruction	93	46	19	31	4	14	28	4	20	3
Overhead projector	187	19	14	5	5	2	1	3	14	8
Language laboratory	118	—	—	—	3	—	8	1	—	2
Programed text	75	9	36	4	19	—	—	3	5	4
Teaching machine	44	4	25	—	45	—	—	4	16	11

[a] The six secondary districts were excluded from this analysis.

TABLE 41

Subject Location of Most Effective Use of Eleven Audiovisual Media in Secondary Education

		Percent Reporting Effective Use by Secondary Teachers in								
Media	*Number of Districts with Medium*	*Science*	*Mathematics*	*Social Studies*	*English*	*Fine Arts*	*Foreign Language*	*Applied Arts*	*All Subjects*	*No Effective Use*
16mm films	206[a]	32%	2%	38%	6%	2%	—%	9%	47%	2%
Filmstrips	206	21	7	21	9	>1	1	5	42	3
Records	206	>1	>1	10	33	32	15	11	21	4
Tapes	204	>1	>1	10	50	21	36	6	12	6
Opaque projector	191	26	10	20	8	6	>1	6	29	8
Radio	155	—	—	23	1	3	—	—	34	30
Television instruction	80	16	4	15	5	1	4	1	10	4
Overhead projector	167	48	26	8	8	2	1	14	27	7
Language laboratory	118	—	—	—	10	—	87	2	—	2
Programed text	60	7	43	—	18	—	—	2	8	5
Teaching machine	39	5	10	—	26	—	—	—	8	13

[a] The 32 elementary districts were excluded from this analysis.

ary education (cf. Tables A-36 through A-55). Again, films and filmstrips stand out as the universal materials, most applicable and most likely to be used effectively in all areas.

There is one interesting lack of association between frequency of use and reports of effective use. In 1962, 60 percent of the English teachers in these districts used records and only 20 percent used tapes. At that time, there was almost equal use of records and tapes in foreign language. Nevertheless, the superintendents reported a higher incidence of effective use of tapes in both subject areas in 1964. It seems unrealistic to assume that the teachers had discontinued the use of records by 1964, especially in view of the fact that 71 percent of the districts had increased their inventories of record players, with a median increase of 1.10 units per school. It seems more logical to assume that the administrator was indeed more often impressed by the manner in which instructional tapes were employed.

Use of the newer media was both grade specific and subject oriented. Television instruction was judged to be most effectively employed in elementary science, social studies, and foreign language. The overhead projector was seen primarily as a tool for secondary science and mathematics. Teaching machines were considered most suitable for elementary English; programed texts were considered most suitable for secondary mathematics. In general, there was a high concentration of reports of effective use for all of the newer media in one or more of the subject areas (mathematics, foreign language, and English) where use of films and filmstrips had been relatively infrequent. Attempts to increase the variety of instructional materials that are appropriate for these subject areas appear to have met with at least partial success.

IMPLICATIONS FOR THE CHANGE AGENT

It seems axiomatic to conclude from the previous discussion that if those who desire educational change can provide "evidence" of the value of a new instructional technique, they can overcome a fair share of the opposition to that change. But what will the school administrator accept as convincing evidence of value? Each respondent was asked, "What criteria do you use for evaluating the effectiveness of the use of audiovisual media in your district?" Four major criteria were cited:

1. subjective reactions of teachers, students, and supervisors (65 percent);
2. observation of classroom use, often coupled with measurement of student achievement by a general testing program (51 percent). Only two or three districts used control groups to test the value of audiovisual instruction;
3. teacher requests for materials and observation of the frequency, discrim-

ination, and skill with which teachers used available materials (26 percent); and

4. a nonspecific concern about how well audiovisual materials relate to or improve the curriculum (16 percent).

The emphasis on subjective reactions and observation supports Brickell's conclusion that local school systems cannot be expected to generate anything more than observational evidence of the value of their educational practices. Reliance on general achievement tests for some kind of objective measurement of the teaching power of audiovisual techniques is evidence for his argument that appropriate evaluative measures are not developed simultaneously with the invention of new instructional programs (cf. Brickell [1, pp. 33-34]). One respondent spoke well for the whole group when he wrote, "... the district has no objective criteria developed at this time; subjective judgment is the best we have come up with to date." Subjective judgments might be supplemented by direct observation or achievement test scores (in 35 percent of the cases), by teacher "demand" (in 13 percent of the cases), or stand alone (in 17 percent of the cases), but they were a major criterion measure for 50 percent or more of the districts in all size categories and under all types of audiovisual coordination (see Tables A-89 and A-90).

Perhaps the most interesting difference in the relative emphasis placed on each type of evaluative criterion is that found when we compare the 29 districts that had adopted all five of the newer media with the 26 districts that did not use any of them. Eighty-six percent of the total adopters and only 54 percent of the total nonadopters reported the use of staff and student reactions as a major evaluative criterion. Conversely, 62 percent of the nonadopters and only 48 percent of the adopters reported the use of classroom observation and test results as a major evaluative criterion. Although reliance on test results (which usually show little or no difference attributable to the new procedure) would seem to be a valid deterrent to expensive innovations, such inconclusive results are readily available to both adopters and nonadopters. One wonders, therefore, what the differential emphasis on "subjective" and "objective" evidence between the two groups may mean. If discouraging test results do not dampen the desire of the adopters to try new techniques, it is doubtful that positive test results would convince the nonadopters. We suspect that there is a more fundamental response set toward or against change itself which preconditions the type of evidence one uses to justify his decision.

These findings suggest that a multifaceted and continuous educational program is most effective in producing change. Personal experience, demonstrations, professional journals, and faculty requests vary in importance as sources of information depending upon the medium under consideration. Observation of a functioning program in an actual school setting may well be a critical factor in the adoption of large, complex, and expensive systems of instruction, such as complete courses on television or teaching language in an electronic laboratory. However, such observation does not appear to be as crucial for less comprehensive innovations. A professional demonstration, either at a meeting or in one's own school, may be an effective substitute, particularly for the later adopters. Moreover, either form of demonstration can be reinforced by the dissemination of information through professional educational journals. This latter channel may be especially useful in acquainting the administrator with innovations which entail a radical change in classroom pedagogy (e.g., the language laboratory and programed instruction). Although new programs have been successfully introduced despite initial teacher apathy, or even opposition, faculty interest was a major reason for adoption of the three media which experienced the most rapid diffusion between 1961 and 1964—the overhead projector, the programed text, and the language laboratory.

7. Predictions for 1966-67

There was substantial growth in the absolute amount, the relative amount, and the variety of audiovisual equipment resources in the sample population between 1961 and 1964. And there is every indication from the survey data that this "bullish" market should continue for the next three-year period. Equipment standards had shifted upward, and interest in greater use of audiovisual technology had increased sharply since 1961.

In this chapter, we shall analyze the data on projected plans and present three prediction models for short-term growth for nine of the eleven media. The end results of this latter exercise will be a rough estimate of the amount of each item of equipment in the public schools in January 1967. Not even the Delphic Oracle can predict with certainty, but we can attempt a forecast.

PLANS FOR MEDIA USE 1964-66

In 1961, the superintendents had shown the greatest interest in expanding the use of language laboratories; in 1964, their first choice for increased use was the overhead projector.[1] Even though the interest in electronic language equipment had dropped slightly between the two time periods, 52 percent of the respondents planned increased use of these installations by the end of 1966. Indeed, as shown in Table 42, levels of use in 1964 were satisfactory to the majority only for radios, opaque projectors, and teaching machines. Conversely, in 1961, levels of use had been satisfactory to the majority of the respondents for all media except the language laboratory.

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[1] As before, the responses were reduced to a "continue present use"-"increase use" dichotomy.

TABLE 42

Change in Plans To Increase Use of Audiovisual Media 1961-1966 for 238 Districts[a]

	Planned To Increase Use 1961-1964		*Plan To Increase Use 1964-1966*	
Media	*Number*	*Percent*	*Number*	*Percent*
16mm films	63	*26%*	130	*55%*
Filmstrips	79	*33*	159	*67*
Records	85	*36*	136	*57*
Tapes	85	*36*	179	*75*
Opaque projector	91	*38*	92	*39*
Radio	30	*13*	42	*18*
Television set	71	*30*	136	*57*
Overhead projector	104	*44*	195	*82*
Language laboratory	131	*55*	123	*52*
Programed text	81	*34*	149	*63*
Teaching machine	81	*34*	104	*44*

[a] "Increase use" is defined as either planning to try a medium or to emphasize or increase the use of a medium. Respondents who checked "continue present use," "no plan to try," or did not answer were considered as desiring to maintain the status quo.

District Characteristics and Plans

The pattern of association between each of the district characteristics studied and projected plans for 1964-66 was very much like that found between these same district characteristics and inventory increases between 1961 and 1964. Very small districts favored filmstrips and tapes. Elementary districts put the greatest emphasis on the four traditional materials. Interest in increased use of the newer media was directly associated with the number of schools in the system, with one interesting exception: relatively small districts (with three to five schools) showed the greatest interest in the teaching machine (see Tables A-91 through A-94).

As might be expected, future intentions varied with the position of the person responsible for administering the audiovisual program. The proportion of districts planning increased use of each medium was consistently higher where there was central administrative coordination than where the superintendent or individual school personnel were responsible for the program. The proportion of districts with plans to increase use of all media except the opaque projector and the radio was highest of all among school systems with an audiovisual director (see Table A-95).

1964 Inventory Levels and 1966 Plans

The relationships between 1964 inventory levels and 1966 plans are also strikingly similar to those found between 1961 inventory levels and actual increases by 1964. Increases in the amount of audiovisual equipment per school were significantly related to 1961 inventory levels for five of the nine media for which inventory data were available. There was a positive association between inventory level and increase for 16mm projectors, television sets, and overhead projectors. There was a negative association between the two for opaque projectors and language laboratories. Inventory increases for the other four media were found to be unrelated to 1961 inventory levels. As shown in Table 43, similar associations pertain between 1964 inventory levels and plans for 1966.

There is a positive association between inventory level and plans for television and the overhead projector. Although not quite of the magnitude to attain significance, there is also a direct relationship between inventory level and plans for the 16mm projector. Conversely, districts with above median inventories of opaque projectors and language laboratories were less likely to plan increased use of these media than were districts with below median amounts of these items.

Several implications can be drawn from the predominantly positive association between inventory level and plans. First, the general upward shift in the amount of equipment available has stimulated interest in use of this equipment. This finding is in line with Finn's argument that growth in technological sophistication will create an appetite for further technological growth. Second, if future plans are implemented, the rich (or high inventory level districts) will continue to get richer; the poor (or low inventory level districts) will fall farther behind.

Although there are more rich than poor in our affluent society, there is evidence from these data that there may be a hard core of technologically disadvantaged school systems. These districts have only a limited amount of audiovisual equipment now, and, more significantly, they report that they are "too poor" or "too small" to warrant the adoption of any of the newer media.

The emphasis in this line of reasoning is on the "image" of the district rather than on the "objective" circumstances. Not all of the small-district superintendents find the newer techniques inappropriate for their systems. Some of the very small districts have adopted one or more of the newer media

TABLE 43

1964 Inventory Level and Plans To Increase Use of Audiovisual Media 1964-1966 for 238 Districts

	Above Median 1964		*Below Median 1964*		*Not Have 1964*	
Equipment	*No. of Districts*	*Percent Plan To Increase Use 1964-66*	*No. of Districts*	*Percent Plan To Increase Use 1964-66*	*No. of Districts*	*Percent Plan To Adopt*
16mm projector	120	61%	118	48%	—	—%
Slide-filmstrip projector	112	70	120	64	6	67
Record player	119	59	119	56	—	—
Tape recorder	117	81	116	72	5	20
Opaque projector	107	31	107	48*	24	33
Radio	104	14	78	23	56	18
Television set	83	70	79	67	76	33**
Overhead projector	96	94	92	84	50	52**
Language laboratory (secondary schools only)	59	56	59	76	88	39**

*Difference significant at 5 percent level.
**Difference significant at 1 percent level.

with apparent success, and our analyses have shown that both inventory acquisitions and future plans are relatively independent of school-district wealth available for instructional materials.

The "think poor" systems are well worth further detailed study. Herein lies the acid test of the persuasiveness of the arguments for educational innovation.

PROBABILITY OF REALIZING PLANS

Many factors can intervene between plans and realization. Increases in federal aid to education and an upsurge in public interest in new instructional techniques will encourage the investment of funds in audiovisual technology. On the other hand, premature claims of an educational panacea, resistance from those who feel threatened by the new technology, or unexpected shifts in enrollment and budget requirements may discourage expansion of audiovisual resources.

However, if one can assume that the forces working for and against the implementation of plans between 1964 and 1967 will exert about the same amount of influence as they did in the previous three years, the survey data can be used to predict the proportion of the sample population that might be expected to experience inventory increases by January 1967. Two pieces of data are necessary for this prediction: the number of districts in each planning group in 1964 (from Table 42, p. 110) and the proportion of each 1961 planning group that experienced an inventory increase between 1961 and 1964 (from Table 32, p. 88). Using the proportion of increase for each planning group as a prediction factor for future increase, we arrive at the figures given in the last two columns of Table 44.

The estimates given in Table 44 vary considerably for the eleven media. Approximately three-fourths of the districts should increase their inventories of tape recorders, record players, and overhead projectors; almost two-thirds should acquire 16mm projectors; approximately half should buy more slide-filmstrip projectors, opaque projectors, and television sets; a third should invest in language laboratories and programed texts; and one-fifth should buy teaching machines.

The model could be refined for television sets, language laboratories, and overhead projectors by using a different prediction factor (their own proportionate increase) for the "have's" and the "have not's," thus building the model from four equations rather than two. (The results of this analysis are given in Table A-96.) If this refinement is used, more districts may be expected to increase their inventories of television sets and overhead projectors, particularly the latter; fewer districts may be expected to install new language laboratories. Further refinements in the model could be achieved by intro-

TABLE 44

Estimated Number of Districts That Should Increase Amount of Equipment per School by 1966 for Eleven Media (Prediction based on proportion of increase for each planning group)

Equipment	*Plan To Increase by 1966*	*Prediction Factor*[a]	*Predicted Number*	*No Plan To Increase by 1966*	*Prediction Factor*[a]	*Predicted Number*	*Sum of Predicted Numbers*	*Percent Which Should Increase*
16mm projector	130	*73%*	95	108	*58%*	55	150	*63%*
Slide-filmstrip projector	159	*58*	93	79	*56*	44	137	*58*
Record player	136	*78*	106	102	*68*	69	175	*74*
Tape recorder	179	*80*	143	59	*65*	39	182	*76*
Opaque projector	92	*54*	49	146	*50*	73	122	*51*
Radio	42	*47*	20	196	*40*	78	98	*41*
Television set	136	*56*	77	102	*40*	41	118	*50*
Overhead projector	195	*73*	143	43	*63*	27	170	*71*
Language laboratory (secondary schools only)	117	*43*	50	89	*20*	17	67	*32*
Programed text	149	*46*	68	89	*25*	22	90	*38*
Teaching machine	104	*23*	23	134	*16*	22	45	*19*

[a] The prediction factor is shown as a percent.

ducing other factors into the equation that have been found to be associated with inventory increase or plans, or both (e.g., grade span of district, number of schools, school construction, type of audiovisual coordination). If multiple-regression techniques were employed to determine the relative weights of these characteristics, the probable accuracy of the predicted proportions would be increased.

PREDICTION MODELS FOR 1967 INVENTORY LEVELS

Forecasting is a hazardous but exhilarating business. However, taking our cue from the meteorologist who has found today's weather the best predictor of tomorrow's, we will attempt to predict 1967 inventory levels from the 1961 and 1964 data. All predictions are couched in units of equipment per school; all illustrations are for the 16mm projector; predictions for each of the nine media are presented in a summary table at the end of the section.

Simple Projection Model

The simplest model for short-term growth is a linear extension of current growth curves. This model assumes that the 1964-67 growth in both the amount of equipment *and* in school construction will be the same as that experienced between 1961 and 1964. We know that the sample districts experienced a 5 percent increase in schools and a 27 percent increase in 16mm projectors over the three-year survey period (see Table 26, p. 77). Therefore, the number of 16mm projectors per school in 1967 can be derived from the following equation:

$$\text{16mm per sch}_{67} = \frac{\text{16mm}_{64}\ (1 + \text{increase 16mm}_{61\text{-}64})}{\text{Schs}_{64}\ (1 + \text{increase schs}_{61\text{-}64})} = \frac{4{,}374\ (1 + 0.27)}{2{,}206\ (1 + 0.05)} = 2.38$$

Regression Model

A regression analysis between 1961 inventory level and subsequent inventory increases was computed and presented in Chapter 5. From the regression equation, we find a 1961 mean of 1.48 16mm projectors per school and a 1961-64 mean increase of 0.26 projectors per school (see Table A-81). Assuming that the increase in equipment per school between 1964 and 1967 will be the same as that for the earlier three-year period, we arrive at a January 1967 estimate of 2.00 16mm projectors per school by means of the following equation:

Mean 16mm per sch_{67} = Mean 16mm per sch_{61} + 2 (Mean increase 16mm per $\text{sch}_{61\text{-}64}$)
or:
Mean 16mm per $\text{sch}_{67} = 1.48 + 2\ (0.26) = 2.00$

It should be noted that the regression analysis is based on district mean ratios; thus, each of the 238 districts carries the same weight in the forecast, regardless of the number of schools in the system.

Ideal Model

Each superintendent was asked to estimate (in both 1961 and 1964) the number of additional units of each type of equipment he needed to bring his audiovisual inventory to a satisfactory level. If we assume that the number of units owned plus the number of units needed equal the "ideal" amount of equipment necessary to meet instructional goals at any point in time, this sum can be used in conjunction with the total number of schools at that time to arrive at an ideal amount of equipment per school. (A similar analysis was made to arrive at the ideal number of teachers per unit of equipment in Table 33, p. 92). We know that the sample districts owned 4,374 16mm projectors in 1964 and wanted 829 more. We also know that there were 2,206 schools in these districts in 1964. Therefore:

$$\text{16mm per sch}_{67} = \frac{\text{16mm}_{64} + \text{16mm needed}_{64}}{\text{Schs}_{64}} = \frac{5{,}203}{2{,}206} = 2.36$$

This model is based completely on 1964 data and rests on the assumption that actuality in 1967 will approach ideals in 1964, an assumption that is supported by the survey finding that actual teacher-equipment ratios in 1964 approached ideal teacher-equipment ratios for 1961.

Applying each of the prediction models to each of the nine items of equipment for which inventory data are available, we arrive at the estimated equipment per school figures given in Table 45. In general, the highest figures are achieved with the simple straight line projection; the lowest, with the regression analysis model, although the ideal and the projection models yield almost identical results for 16mm projectors, slide-filmstrip projectors, opaque projectors, overhead projectors, and language laboratories. The order is reversed for radios (where the ideal figure is the highest). Results achieved by the three methods are most similar for opaque projectors and language laboratories; most disparate for record players, tape recorders, and television sets.

The fact that the application of the straight line projection will produce per school ratios that are more favorable than the desired ideal, even when corrected for an increased number of schools in the sample, suggests the major

TABLE 45

Predicted Amount of Audiovisual Equipment per School, January 1967

Equipment	*Prediction Models* *Regression*	*Ideal*	*Simple Projection*
16mm projector	2.00	2.36	2.38
Slide-filmstrip projector	2.09	2.21	2.22
Record player	6.61	6.96	7.60
Tape recorder	2.16	2.19	2.52
Opaque projector	0.77	0.85	0.86
Radio	1.32	1.67	1.48
Television set	1.42	2.05	2.20
Overhead projector	1.04	1.39	1.37
Language laboratory (secondary schools only)	0.62	0.57	0.60

weakness of linear projection models. Such a model does not allow for a ceiling, or saturation point. While it is unlikely that such a point will be reached by 1967, at the present rate of growth it could well be reached for several items in the foreseeable future (notably the opaque projector and language laboratory).

PREDICTED AMOUNT OF EQUIPMENT IN 1967

The prediction models were expressed in units of equipment per school not only so that the derived figures could be compared with recommended standards but also to allow us to convert these figures into national estimates. To take this last step in our forecast for 1967 requires one more set of assumptions.

The latest available source estimates that there are 104,000 public schools in the country (40). However, not all of these schools were represented in our 1964 survey. Schools in districts with fewer than 150 pupils and those in districts with more than 25,000 students were excluded from the population from which the 238 districts were drawn. If we can assume that the lack of audiovisual equipment in the very small districts is counterbalanced by the "overabundance" of equipment in the very large districts in such a manner that the average of the two ends of the distribution approaches the mean for the middle-sized districts included in our 1964 study, we can derive national estimates from the survey data. This assumption is supported by the finding that the 1961 mean equipment per school ratios for the 238 districts and those for the 2,927 respondents in the initial survey (who covered the total range of enrollment size categories) are almost identical for all items except the record player (cf. Table 3, p. 25, with Table A-81).

National predictions based on equipment per school figures derived from each of the three models and 104,000 schools are presented in Table 46. Comparing the minimum prediction for each item with the estimated national totals computed in 1961 (see Table 2, p. 21), we find that predicted percentage increases range from 27 percent for radios to 676 percent for overhead projectors. Although the most dramatic growth is indicated for the overhead projector, equipment resources probably have doubled or tripled for language laboratories, television sets, tape recorders, and opaque projectors. While percentage increases are less spectacular, the predicted gains for radios, slide-filmstrip projectors, 16mm projectors, and record players indicate a substantial capital investment in audiovisual technology. Predicted growth for television sets, tape recorders, slide-filmstrip and 16mm projectors would put total amounts of these items in the 200,000's. At present rates of growth, the overhead projector should also go over the 200,000 mark in the near future.

TABLE 46

Predicted Total Amounts of Audiovisual Equipment
in U.S. Public Schools, January 1967
(Based on three prediction models and 104,000 schools)

	Prediction Models			*Percent Minimum Increase 1961-67*
Equipment	*Regression*	*Ideal*	*Simple Projection*	
16mm projector	208,000	246,000	248,000	66%
Slide-filmstrip projector	218,000	230,000	231,000	29
Record player	688,000	725,000	791,000	88
Tape recorder	225,000	228,000	262,000	155
Opaque projector	80,100	88,500	89,500	104
Radio	138,000	174,000	154,000	27
Television set	148,000	214,000	229,000	196
Overhead projector	108,000	145,000	143,000	676
Language laboratory (secondary schools only)[a]	16,400	15,100	15,900	228

[a] Based on 26,400 secondary schools.

We make no particular claim for the validity of the models or the predicted totals suggested here. Rather, they are presented for two reasons. First, this exercise in forecasting may stimulate others to construct their own prediction models, using another set of criterion variables. Second, the models can serve as a yardstick against which to compare actual increases reported in the 1966-67 school year. Deviations in either direction from the expected results can be examined with the expectation of finding other critical variables that should be taken into account when constructing prediction models.

If we can continue to presume upon the unflagging courtesy and cooperation of the 238 districts that have participated in the project since 1961, we would like to test the prediction models and other observations made throughout this monograph at periodic intervals. Thus our story ends with a comma rather than a period,

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Appendix A

Tables

Information for districts, schools, principals, and coordinators is presented by district size. When a single code number rather than the number of pupils enrolled is used, the enrollment size categories are coded as follows:

2	*12,000-24,999 pupils*
3	*6,000-11,999 pupils*
4	*3,000- 5,999 pupils*
5	*1,200- 2,999 pupils*
6	*600- 1,199 pupils*
7	*300- 599 pupils*
8	*150- 299 pupils*

Information for teachers is presented by elementary grade or secondary subject taught.

Elementary teachers are grouped into four categories—kindergarten through third grade, fourth through sixth grade, seventh through ninth grade, and those teachers who teach across all six or eight grades. This latter group are usually specialists in art, music, physical education, or special education.

Secondary teachers are grouped into eight subject categories—science, mathematics, foreign language, English, social studies, fine arts (music and art), applied arts (industrial, home economics, and commercial education), and physical education and guidance.

TABLE A-1

Ownership of Equipment and Materials by District Size, 1961: I

(Based on total sample of 2,927)

		Percent of Districts Reporting Item Available										
District Size	*Number of Districts*	*Record Player*	*Slide-Filmstrip Projector*	*16mm Projector*	*Radio*	*Tape Recorder*	*Television Set*	*Opaque Projector*	*Overhead Projector*	*Language Laboratory*	*Filmstrip Prints*	*16mm Film Prints*
Total (All Districts)	2,927	93.3	88.6	93.2	67.2	87.8	51.1	77.3	46.4	28.9	78.8	37.2
75,000 or more	29	93.1	96.6	100.0	96.6	100.0	100.0	96.6	89.6	82.8	100.0	100.0
25,000-74,999	75	97.3	96.0	100.0	82.7	97.3	85.3	98.7	89.4	74.7	92.0	93.3
12,000-24,999	196	99.0	96.9	100.0	81.6	99.0	82.1	98.0	86.7	55.6	95.9	83.7
6,000-11,999	358	97.8	96.4	98.9	75.6	98.6	74.5	98.3	73.9	46.8	88.5	71.1
3,000- 5,999	580	97.8	94.1	99.1	78.6	98.6	64.5	95.2	60.3	41.2	86.4	49.3
1,200- 2,999	580	98.1	94.3	99.1	71.2	97.8	53.6	91.4	49.3	29.0	87.2	30.7
600- 1,199	316	98.1	95.6	100.0	69.6	98.1	41.1	82.0	33.9	16.1	80.4	13.9
300- 599	292	98.3	91.4	99.6	55.0	89.3	26.5	58.4	21.6	6.9	71.8	10.6
150- 299	200	92.9	86.9	96.5	55.0	71.2	26.3	36.9	8.6	5.0	71.7	10.6
50- 149	146	79.4	59.6	72.6	37.8	40.4	19.2	19.2	4.8	1.4	52.0	5.5
1- 49	155	33.5	22.6	11.6	19.4	4.5	1.9	1.3	0.6	—	8.4	1.9

TABLE A-2

Ownership of Equipment and Materials by District Size, 1961: II
(Based on initial sample of 2,537)

District Size	*Number of Districts*	*Percent of Districts Reporting Item Available*				
		Filmstrip (only) Projector	*2 x 2 Slide Projector*	*Disc Recordings*	*2 x 2 Slides*	*Tape Recordings*
Total (All Districts)	2,537	*40.6*	*20.2*	*58.0*	*31.1*	*46.0*
75,000 or more	29	*41.4*	*34.5*	*100.0*	*89.6*	*96.6*
25,000-74.999	67	*44.8*	*34.3*	*69.3*	*58.7*	*68.0*
12,000-24,999	144	*50.0*	*41.7*	*79.2*	*68.0*	*81.9*
6,000-11,999	305	*48.2*	*31.8*	*71.1*	*53.1*	*63.6*
3,000- 5,999	511	*50.3*	*24.6*	*68.1*	*41.9*	*59.9*
1,200- 2,999	491	*46.4*	*23.8*	*63.7*	*27.9*	*47.9*
600- 1,199	275	*36.4*	*13.8*	*55.3*	*19.6*	*38.5*
300- 599	251	*34.6*	*10.8*	*46.2*	*12.7*	*30.3*
150- 299	167	*26.3*	*6.6*	*38.9*	*7.8*	*21.0*
50- 149	143	*28.0*	*2.8*	*32.9*	*6.3*	*11.2*
1- 49	154	*8.4*	—	*8.4*	—	—

TABLE A-3

Major Film Sources by District Size, 1961

District Size	Number of Districts	Percent of Films from Each Source						
		University Film Libraries	*Regional or County Film Libraries*	*Business or Trade*	*Own School System*	*State Department of Education*	*Other*	*No Source Given*
Total (All Districts)	2,537[a]	25.1	18.4	15.6	14.6	9.2	10.4[b]	6.7[c]
0 (75,000 or more)	29	1.5	0.3	4.7	82.7	5.0	2.4	3.4
1 (25,000-74,999)	67	4.7	6.3	3.0	73.9	6.4	4.2	1.5
2 (12,000-24,999)	144	11.1	16.2	6.7	51.3	6.0	6.5	2.2
3 (6,000-11,999)	305	24.6	14.5	10.1	29.5	8.7	9.3	3.4
4 (3,000- 5,999)	511	25.4	23.4	11.7	15.0	12.6	9.7	2.2
5 (1,200- 2,999)	491	33.4	21.1	17.6	4.9	10.2	11.4	1.4
6 (600- 1,199)	275	34.1	17.5	23.2	2.7	8.1	12.2	2.2
7 (300- 599)	251	30.6	19.5	22.8	1.5	9.9	12.9	2.8
8 (150- 299)	167	28.4	18.1	28.3	1.6	7.5	12.5	3.6
9 (50- 149)	143	19.4	14.2	20.1	6.2	9.0	15.0	16.1
10 (1- 49)	154	2.3	15.6	5.5	7.4	3.3	7.3	58.6

[a] Only the initial respondents were used for this analysis; therefore, the total number of districts replying for all items is 2,537.

[b] Other sources include city or county public libraries, U.S. Government agencies, and nonprofit or religious organizations.

[c] Through the first eight size categories, this percent reflects the number of districts which did not have this information readily available. In the two smallest size categories, the percent reflects the number of districts which do not use films.

TABLE A-4

Type of Language Laboratory—Secondary Schools, 1962 by District Size

District Size	Number of Schools	Percent of Schools Reporting		
		No Laboratory	*Partial Laboratory*	*Complete Laboratory*
Total	209	57.9	19.1	23.0
12,000-24,999	25	28.0	44.0	28.0
6,000-11,999	33	39.4	39.4	21.2
3,000- 5,999	47	12.9	53.1	34.0
1,200- 2,999	58	27.6	44.8	27.6
150- 1,199	46	67.5	28.2	4.3

TABLE A-5

Size of Equipment Inventory—Elementary Schools for All District Sizes (N = 308)

Type of Equipment	Percent of Schools Reporting						
	None	1	2	3	4	5-9	10+
Record player	1.9	8.1	10.1	9.7	9.7	29.5	29.2[a]
16mm projector	5.5	63.6	22.4	4.5	1.6	1.0	—
Slide-filmstrip projector	4.9	44.2	22.7	14.6	6.8	5.5	—
Tape recorder	23.7	54.2	14.0	4.2	1.6	1.6	—
Radio	25.6	39.9	18.2	3.6	3.6	5.2	2.5
Opaque projector	39.3	56.5	3.9	—	—	—	—
Television set	59.7	22.7	7.1	4.2	1.9	3.2	0.3
Overhead projector	80.2	17.8	1.6	—	—	—	—

TABLE A-6

Size of Equipment Inventory—Secondary Schools for All District Sizes (N = 209)

Type of Equipment	Percent of Schools Reporting						
	None	1	2	3	4	5-9	10+
Record player	0.5	12.4	21.5	21.1	12.4	22.6	6.7[a]
16mm projector	—	20.1	29.7	17.7	11.5	16.2	1.9
Slide-filmstrip projector	1.9	18.2	31.6	15.3	12.0	15.3	2.9
Tape recorder	1.0	17.7	31.1	19.1	12.0	11.8	4.5
Radio	23.4	43.5	19.1	6.2	2.4	1.0	1.9
Opaque projector	24.4	56.9	12.4	3.8	0.5	—	—
Television set	48.3	35.9	8.6	1.9	1.9	1.0	0.9
Overhead projector	44.5	39.7	10.1	2.9	1.9	—	—

[a] The percentages across the rows do not add to 100 percent because a few principals failed to specify the amount of equipment in their schools.

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TABLE A-7

Number of Teachers per Unit of School-Based Equipment
Elementary Schools by Size of School

Type of Equipment	*Number of Teachers per Unit of Equipment in Each School Size[a] Category*			
	Large	*Medium*	*Small*	*Very Small*
Number of Schools in Category[b]	15	51	142	100
Record player	3.0	1.8	1.5	1.9
16mm projector	18.7	12.6	11.0	7.3
Slide-filmstrip projector	3.5	2.9	1.9	1.2
Tape recorder	16.7	13.5	6.7	6.5
Radio	25.4	6.7	6.4	3.9
Opaque projector	32.3	22.4	14.5	7.2
Television set	(9.4)[c]	10.6	8.0	5.0
Overhead projector	37.5	22.8	14.2	(7.0)[c]

[a] School size is categorized by the number of teachers in the school. The code is:

Large 31-50 teachers
Medium 21-30 teachers
Small 11-20 teachers
Very small 1-10 teachers

There were no elementary schools with more than 50 teachers in the sample.

[b] As these ratios were computed only for those schools which had the equipment, the number of schools involved varies for each entry in the table. Unless otherwise noted, all cells contain 10 or more schools.

[c] Ratio computed with less than 10 schools.

TABLE A-8

Number of Teachers per Unit of School-Based Equipment
Secondary Schools by Size of School

Type of Equipment	*Number of Teachers per Unit of Equipment in Each School Size[a] Category*				
	Very Large	*Large*	*Medium*	*Small*	*Very Small*
Number of Schools in Category[b]	44	63	36	51	15
Record player	10.5	10.4	8.1	5.2	4.6
16mm projector	12.8	12.9	10.2	8.5	6.4
Slide-filmstrip projector	13.1	13.2	12.2	7.8	3.6
Tape recorder	11.2	13.5	10.1	8.1	6.7
Radio	33.0	15.4	17.1	11.4	7.3
Opaque projector	44.8	31.8	24.0	14.6	(7.8)[c]
Television set	25.5	27.2	13.4	13.5	(10.0)[c]
Overhead projector	44.9	30.1	21.0	14.6	(7.5)[c]

[a] School size is categorized by the number of teachers in the school. The code is:

Very large 51-150 teachers
Large 31- 50 teachers
Medium 21- 30 teachers
Small 11- 20 teachers
Very small 1- 10 teachers

[b] As these ratios were computed only for those schools which had the equipment, the number of schools involved varies for each entry in the table. Unless otherwise noted, all cells contain 10 or more schools.

[c] Ratio computed with less than 10 schools.

TABLE A-9

Source of Films—Elementary Schools by District Size

Size of District	*Number of Schools*	*Percent of Films Received from Each Source*			
		School District	*Other Educational Sources*	*Business Sources*	*No Source Given*
Total	308	28.6	47.3	20.0	4.1
2	40	73.9	15.3	10.8	—
3	68	47.8	32.1	15.9	4.2
4	70	25.8	57.3	12.6	4.3
5	70	9.9	59.9	24.6	6.6
6, 7, 8	60	1.8	59.4	33.8	5.0

TABLE A-10

Source of Films—Secondary Schools by District Size

Size of District	*Number of Schools*	*Percent of Films Received from Each Source*			
		School District	*Other Educational Sources*	*Business Sources*	*No Source Given*
Total	209	9.3	55.1	33.6	2.0
2	25	29.9	43.0	27.1	—
3	33	11.3	50.4	29.3	9.0
4	47	8.5	59.9	29.5	2.1
5	58	7.1	59.6	33.3	—
6, 7, 8	46	0.3	54.5	45.2	—

TABLE A-11

Size of Materials Collections—Elementary Schools for All District Sizes

(N = 308)

Type of Material	*Percent of Schools Reporting*					
	0	1-9	10-49	50-99	100+[a]	*Unknown*
Filmstrips	*31.5*	*16.2*	*10.7*	*9.4*	*30.5*	*1.6*
Records	*19.8*	*1.3*	*15.6*	*20.1*	*40.6*	*2.6*
Tape recordings	*74.4*	*11.5*	*10.5*	*1.0*	*1.6*	*1.0*
2 x 2 slides	*81.9*	*0.6*	*5.6*	*4.9*	*6.2*	—

[a] Thirteen schools reported 500-1,500 filmstrips; four schools reported 500-999 records; no schools had over 500 tapes or 2 x 2 slides.

TABLE A-12

Size of Materials Collections—Secondary Schools for All District Sizes

(N = 209)

Type of Material	*Percent of Schools Reporting*					
	0	1-9	10-49	50-99	100+[a]	*Unknown*
Filmstrips	*25.8*	*13.9*	*11.5*	*10.5*	*34.4*	*3.8*
Records	*26.8*	*2.9*	*29.7*	*13.9*	*22.5*	*4.3*
Tape recordings	*43.1*	*8.1*	*28.2*	*7.2*	*8.6*	*4.8*
2 x 2 slides	*65.1*	*0.5*	*6.2*	*5.3*	*18.2*	*4.8*

[a] Twelve schools reported 500-2,000 filmstrips; eight schools reported 500-2,400 records; one school had over 500 tapes; four schools reported 500-1,500 2 x 2 slides.

TABLE A-13

Comparison of Production Facilities Available in Individual Schools
Elementary Schools for All District Sizes

Type of Facility	*Average Percent*	*Percent of Schools with Facility in Each Size Category*				
		2	3	4	5	6, 7, 8
Number of Schools	308	40	68	70	70	60
Tape recorder[a]	42	67.5	48.5	31.4	38.6	36.7
Darkroom	8	7.5	4.4	5.7	10.0	11.7
35mm still camera	11	15.0	20.6	8.6	7.1	3.3
Display-making	12	17.5	13.2	11.4	12.9	8.3
Motion picture camera	6	5.0	7.4	7.1	7.1	5.0
Transparency-making	9	15.0	8.8	4.3	8.6	10.0
No special facilities	52	25.0	48.5	62.9	64.3	68.3

[a] Percentages are based on reports of "tape recording facilities." In all instances, they are lower than inventory figures for tape recorders.

TABLE A-14

Comparison of Production Facilities Available in Individual Schools
Secondary Schools for All District Sizes

Type of Facility	*Average Percent*	*Percent of Schools with Facility in Each Size Category*				
		2	3	4	5	6, 7, 8
Number of Schools	209	25	33	47	58	46
Tape recorder[a]	66	56.0	69.7	80.8	65.5	52.2
Darkroom	55	44.0	48.5	68.1	67.2	34.8
35mm still camera	33	32.0	45.4	31.9	37.9	17.4
Display-making	25	16.0	27.3	34.0	31.0	13.0
Motion picture camera	36	28.0	27.3	46.8	44.8	26.1
Transparency-making	30	16.0	24.2	44.7	37.9	17.4
No special facilities	19	24.0	18.2	8.5	19.0	28.2

[a] Percentages are based on reports of "tape recording facilities." In all instances, they are lower than inventory figures for tape recorders.

TABLE A-15

Type of Audiovisual Training—Elementary AV Coordinators by District Size

Size of District	Number of Coordinators	Percent of AV Coordinators in Training Category			
		No Training	College Course Only	Inservice Training Only	College & Inservice Training
Total	134	17.2	32.1	16.4	34.3
2	26	11.5	42.3	23.2	23.0
3	34	17.6	38.3	11.7	32.4
4	27	18.5	26.0	18.5	37.0
5	24	25.0	16.7	20.9	37.4
6, 7, 8	23	13.0	34.8	8.7	43.5

TABLE A-16

Type of Audiovisual Training—Secondary AV Coordinators by District Size

Size of District	Number of Coordinators	Percent of AV Coordinators in Training Category			
		No Training	College Course Only	Inservice Training Only	College & Inservice Training
Total	157	20.4	45.9	7.6	26.1
2	21	28.6	47.6	—	23.8
3	29	20.7	44.8	13.8	20.7
4	41	22.0	36.6	7.3	34.1
5	43	16.3	51.0	7.0	25.7
6, 7, 8	23	17.4	52.1	8.7	21.8

TABLE A-17

Person from Whom Help in Using Audiovisual Media Is Obtained Elementary Teachers by Grade Taught

		Percent of Teachers Who Obtain Help from			
Grade Taught	*Number of Teachers*	*AV Coordinator*	*Other School Personnel*	*No One*	*Seek No Help*
Total	4,166	42	26	23	9
K-3	2,114	41	27	23	9
4-6	1,567	42	25	23	10
7-9	309	45	19	28	8
1-6, 1-8	176	32	26	31	11

TABLE A-18

Person from Whom Help in Using Audiovisual Media Is Obtained Secondary Teachers by Subject Taught

		Percent of Teachers Who Obtain Help from			
Subject Taught	*Number of Teachers*	*AV Coordinator*	*Other School Personnel*	*No One*	*Seek No Help*
Total	6,464	39	20	31	10
Science	735	40	19	34	7
Social studies	894	43	22	27	8
Fine arts	406	37	19	33	11
Language	427	33	26	31	10
English	1,219	41	20	30	9
Applied arts	1,274	38	17	35	10
P.E., Guidance	747	41	19	28	12
Mathematics	762	37	19	32	12

TABLE A-19

Comparison of Most Important Services AV Coordinator May Perform Elementary Principals for All District Sizes (Services listed in order of choice)

Type of Service	*Percent of Principals Who Say Service Is Important in Each Size Category*[a]				
	2	3	4	5	6, 7, 8
Number of Principals	40	68	70	70	60
Ordering and scheduling media	*52.5*	*50.0*	*50.0*	*51.4*	*76.7*
Teaching operation of equipment	*45.0*	*50.0*	*51.4*	*48.6*	*46.7*
Providing data on new materials	*67.5*	*54.4*	*47.1*	*41.4*	*33.3*
Suggesting appropriate materials	*30.0*	*32.4*	*45.7*	*27.1*	*30.0*
Suggesting new uses for materials	*42.5*	*32.4*	*27.1*	*34.3*	*23.3*
Maintaining equipment	*25.0*	*26.5*	*21.4*	*42.9*	*28.3*
Classifying and storing materials	*25.0*	*22.1*	*20.0*	*18.6*	*33.3*
Preparing specialized materials	*7.5*	*10.3*	*14.3*	*7.1*	*8.3*

[a] Each principal was asked to check the three most important services for his school.

TABLE A-20

Comparison of Most Important Services AV Coordinators Perform Elementary AV Coordinators for All District Sizes (Services listed in order of choice)

Type of Service	*Percent of AV Coordinators Who Perform Service in Each Size Category*[a]				
	2	3	4	5	6, 7, 8
Number of Coordinators	26	34	27	24	23
Ordering and scheduling media	*76.9*	*73.5*	*70.4*	*83.3*	*69.6*
Teaching operation of equipment	*46.2*	*58.8*	*51.9*	*37.5*	*56.5*
Suggesting appropriate materials	*34.6*	*47.1*	*48.1*	*45.8*	*34.8*
Providing data on new materials	*57.7*	*32.4*	*37.0*	*37.5*	*26.1*
Classifying and storing materials	*19.2*	*26.5*	*29.6*	*33.3*	*34.8*
Suggesting new uses for materials	*26.9*	*26.5*	*40.7*	*16.7*	*26.1*
Maintaining equipment	*23.1*	*20.6*	*7.4*	*37.5*	*39.1*
Preparing specialized materials	*3.8*	—	*7.4*	*8.3*	—

[a] Each AV coordinator was asked to check the three most important services he performed.

TABLE A-21

Comparison of Most Important AV Services Needed Elementary Teachers for All Grade Levels
(Services listed in order of choice)

Type of Service	*Percent of Teachers Who Need Service*[a]			
	K-3	4-6	7-9	1-6, 1-8
Number of Teachers	2,114	1,567	309	176
Providing data on new materials	*23.5*	*23.0*	*22.6*	*24.4*
Suggesting appropriate materials	*19.4*	*17.8*	*20.7*	*20.5*
Teaching operation of equipment	*19.7*	*15.5*	*10.7*	*12.5*
Suggesting new uses for materials	*11.5*	*11.3*	*8.7*	*11.4*
Ordering and scheduling media	*5.6*	*6.8*	*11.0*	*6.8*
More time[b]	*4.6*	*5.4*	*4.5*	*6.2*
Preparing specialized materials	*3.9*	*4.3*	*6.6*	*5.7*
Maintaining equipment	*2.8*	*4.9*	*2.6*	*2.3*
Classifying and storing materials	*1.4*	*1.7*	*1.6*	*1.7*
No help needed	*7.6*	*9.3*	*11.0*	*8.5*

[a] As each teacher was asked to check only one service, this table cannot be directly compared with those for principals and AV coordinators. However, the relative importance of each service to each of the groups can be compared.

[b] This need was a spontaneous write-in comment from the teachers.

TABLE A-22

Comparison of Most Important Services AV Coordinator May Perform Secondary Principals for All District Sizes
(Services listed in order of choice)

Type of Service	*Percent of Principals Who Say Service Is Important in Each Size Category*[a]				
	2	3	4	5	6, 7, 8
Number of Principals	25	33	47	58	46
Ordering and scheduling media	*76.0*	*69.7*	*76.6*	*74.1*	*65.2*
Providing data on new materials	*68.0*	*36.4*	*48.9*	*48.3*	*50.0*
Teaching operation of equipment	*44.0*	*48.5*	*48.9*	*51.7*	*45.7*
Suggesting appropriate materials	*28.0*	*33.3*	*38.3*	*25.9*	*34.8*
Maintaining equipment	*12.0*	*48.5*	*27.7*	*36.2*	*23.9*
Suggesting new uses for materials	*36.0*	*18.2*	*21.3*	*24.1*	*28.3*
Classifying and storing materials	*20.0*	*33.3*	*23.4*	*22.4*	*13.0*
Preparing specialized materials	*16.0*	*6.1*	*10.6*	*6.9*	*4.3*

[a] Each principal was asked to check the three most important services for his school.

TABLE A-23

Comparison of Most Important Services AV Coordinators Perform Secondary AV Coordinators for All District Sizes (Services listed in order of choice)

Type of Service	*Percent of AV Coordinators Who Perform Service in Each Size Category*[a]				
	2	3	4	5	6, 7, 8
Number of Coordinators	21	29	41	43	23
Ordering and scheduling media	*90.5*	*86.2*	*78.0*	*83.7*	*73.9*
Maintaining equipment	*33.3*	*44.8*	*53.7*	*46.5*	*43.5*
Teaching operation of equipment	*33.3*	*51.7*	*31.7*	*41.9*	*56.5*
Providing data on new materials	*47.6*	*34.5*	*34.1*	*32.6*	*30.4*
Classifying and storing materials	*42.9*	*27.6*	*26.8*	*25.6*	*34.8*
Suggesting appropriate materials	*9.5*	*24.1*	*36.6*	*34.9*	*30.4*
Suggesting new uses for materials	*33.3*	*24.1*	*19.5*	*20.9*	*26.8*
Preparing specialized materials	—	*3.4*	*4.9*	*2.3*	*4.3*

[a] Each AV coordinator was asked to check the three most important services he performed.

TABLE A-24

Comparison of Most Important AV Services Needed Secondary Teachers for Four Highest Use Subjects (Services listed in order of choice)

Type of Service	*Percent of Teachers Who Need Service*[a]			
	Science	*Social Studies*	*Fine Arts*	*Language*
Number of Teachers	735	894	406	427
Providing data on new materials	*29.6*	*27.3*	*24.9*	*16.6*
Suggesting appropriate materials	*18.4*	*18.5*	*19.5*	*19.9*
Ordering and scheduling media	*11.6*	*12.1*	*8.9*	*9.1*
Teaching operation of equipment	*3.8*	*6.9*	*7.4*	*16.6*
Suggesting new uses for materials	*7.2*	*7.4*	*6.9*	*8.9*
Preparing specialized materials	*7.6*	*5.9*	*8.4*	*10.5*
More time[b]	*6.8*	*7.3*	*7.4*	*4.5*
Maintaining equipment	*3.8*	*4.0*	*5.4*	*3.3*
Classifying and storing materials	*1.1*	*1.5*	*1.2*	*0.5*
No help needed	*10.1*	*9.1*	*10.0*	*10.1*

[a] As each teacher was asked to check only one service, this table cannot be directly compared with those for principals and AV coordinators. However, the relative importance of each service to each of the three groups can be compared.

[b] This need was a spontaneous write-in comment from the teachers.

TABLE A-25

Comparison of Most Important AV Services Needed Secondary Teachers for Four Lowest Use Subjects (Services listed in order of choice)

	Percent of Teachers Who Need Service[a]			
Type of Service	*English*	*Applied Arts*	*P.E., Guidance*	*Mathematics*
Number of Teachers	1,219	1,274	747	762
Providing data on new materials	19.5	27.5	28.7	18.6
Suggesting appropriate materials	22.8	15.6	16.4	28.2
Teaching operation of equipment	15.9	10.4	11.5	9.2
Ordering and scheduling media	9.5	9.8	10.8	5.6
Suggesting new uses for materials	9.1	7.7	7.1	8.7
More time[b]	6.7	7.4	5.9	6.2
Preparing specialized materials	4.5	6.5	3.7	8.0
Maintaining equipment	3.5	3.6	4.3	0.9
Classifying and storing materials	0.6	1.4	1.2	0.3
No help needed	7.9	10.1	10.4	14.3

[a] As each teacher was asked to check only one service, this table cannot be directly compared with those for principals and AV coordinators. However, the relative importance of each service to each of the three groups can be compared.

[b] This need was a spontaneous write-in comment from the teachers.

TABLE A-26

Comparison of Use of Any Audiovisual Media—Elementary Teachers for Grade Taught and District Size

Grade Taught	*Percent of Teachers in Each District Size Category Who Used Any Medium*				
	2	3	4	5	6, 7, 8
Total Number of Teachers[a]	654	959	890	951	712
Mean	*95.2*	*94.0*	*95.4*	*94.4*	*90.0*
K-3	*93.9*	*94.9*	*89.0*	*88.4*	*90.7*
4-6	*98.4*	*96.0*	*95.1*	*96.9*	*92.7*
7-9	*93.1*[b]	*91.4*	*88.0*[b]	*85.1*	*84.2*
1-6, 1-8	*83.3*	*82.6*[b]	*89.4*	*90.0*	*80.5*

[a] Unless otherwise noted, all cells contain 30 or more teachers.

[b] Proportion based on fewer than 30 teachers.

TABLE A-27

Comparison of Use of Any Audiovisual Media—Secondary Teachers for Subject Taught and District Size

Subject Taught	*Percent of Teachers in Each District Size Category Who Used Any Medium*				
	2	3	4	5	6, 7, 8
Total Number of Teachers[a]	1,199	1,383	1,843	1,466	573
Mean	*80.7*	*81.3*	*82.3*	*79.0*	*82.9*
Science	*92.6*	*94.7*	*94.7*	*97.6*	*93.2*
Social studies	*90.1*	*92.5*	*91.1*	*89.9*	*94.1*
Fine arts	*90.8*	*91.8*	*94.4*	*83.2*	*95.0*
Language	*88.0*	*90.7*	*86.7*	*90.6*	*87.5*
English	*84.3*	*86.6*	*86.2*	*82.7*	*77.8*
Applied arts	*80.2*	*80.5*	*86.5*	*82.2*	*80.8*
P.E., Guidance	*78.3*	*76.5*	*77.1*	*65.2*	*86.0*
Mathematics	*46.0*	*46.4*	*41.6*	*42.7*	*59.0*

[a] Unless otherwise noted, all cells contain 30 or more teachers.

TABLE A-28

Comparison of Use of Any Audiovisual Media—Elementary Teachers for Grade Taught and School Size

Grade Taught	*Percent of Teachers in Each School Size[a] Who Used Any Medium* *Large*	*Medium*	*Small*	*Very Small*
Total Number of Teachers[b]	506	1,130	1,968	562
Mean	*91.3*	*93.7*	*95.3*	*93.2*
K-3	*91.3*	*93.7*	*95.3*	*94.1*
4-6	*93.2*	*95.5*	*95.5*	*97.4*
7-9	*87.7*	*93.4*	*91.5*	*65.9*
1-6, 1-8	*81.4*	*80.0*	*91.4*	*100.0*[c]

[a] School size is categorized by the number of teachers in the school. The code is:

Large	31-50 teachers	*Small*	11-20 teachers
Medium	21-30 teachers	*Very small*	1-10 teachers

There were no elementary schools with more than 50 teachers in the sample.

[b] Unless otherwise noted, all cells contain 30 or more teachers.

[c] Percent based on fewer than 30 teachers.

TABLE A-29

Comparison of Use of Any Audiovisual Media—Secondary Teachers for Subject Taught and School Size

Subject Taught	*Percent of Teachers in Each School Size[a] Who Used Any Medium* *Very Large*	*Large*	*Medium*	*Small*
Total Number of Teachers[b]	2,778	2,126	804	661
Mean	*81.9*	*79.7*	*81.7*	*82.8*
Science	*94.2*	*94.6*	*97.8*	*93.7*
Social studies	*92.3*	*90.7*	*91.8*	*89.1*
Fine arts	*93.8*	*89.4*	*84.1*	*91.4*
Language	*92.7*	*84.9*	*75.0*	*93.8*
English	*88.6*	*81.8*	*81.5*	*81.5*
Applied arts	*82.4*	*82.2*	*83.9*	*86.0*
P.E., Guidance	*74.2*	*74.9*	*74.3*	*77.8*
Mathematics	*37.8*	*42.3*	*62.4*	*57.3*

[a] School size is categorized by the number of teachers in the school. The code is:

Very large	51-150 teachers	*Small*	11- 20 teachers
Large	31- 50 teachers	*Very small*	1- 10 teachers
Medium	21- 30 teachers		

There were too few subject specialists in the very small secondary schools to permit this type of analysis.

[b] Unless otherwise noted, all cells contain 30 or more teachers.

TABLE A-30

Comparison of Use of Audiovisual Media for Selected Elementary Grades by Highest Degree Obtained

	Percent of Teachers in Each Degree Status Who Used AV Media		
Grade Taught	*M.A., M.S., M.Ed.*[a]	*B.A., B.S., B.Ed.*	*No College Degree*[b]
K-3	98.0	95.0	90.4
4-6	98.0	98.3	91.6
7-9	95.7	88.1	76.2

[a] The teachers who hold Ph.D.'s (or Ed.D.'s) were omitted from this analysis since the number was too small (a total of 33 over all groups).

[b] This group includes those teachers who hold teaching certificates or associate's degrees.

TABLE A-31

Comparison of Use of Audiovisual Media for Selected Secondary Subjects by Highest Degree Obtained

	Percent of Teachers in Each Degree Status Who Used AV Media		
Subject Taught	*M.A., M.S., M.Ed.*[a]	*B.A., B.S., B.Ed.*	*No College Degree*[b]
Science	95.1	94.5	[ ]
Social studies	92.0	90.5	[ ]
Fine arts	96.2	85.8	[ ]
Language	92.6	85.8	[ ]
English	88.4	82.7	[ ]
Mathematics	41.6	48.0	[ ]

[a] The teachers who hold Ph.D.'s (or Ed.D.'s) were omitted from this analysis since the number was too small (a total of 33 over all groups).

[b] This group includes those teachers who hold teaching certificates or associate's degrees.

TABLE A-32

Comparison of Use of Audiovisual Media for Selected Elementary Grades by Years of Teaching Experience

[redacted]

Grade Taught	Percent of Teachers in Each Experience Category Who Used AV Media			
	1-3 Years	4-9 Years	10-19 Years	20+ Years
K-3	92.7	95.7	95.4	93.0
4-6	95.7	96.7	95.9	95.3
7-9	88.3	89.8	83.8	88.1

TABLE A-33

Comparison of Use of Audiovisual Media for Selected Secondary Subjects by Years of Teaching Experience

Subject Taught	Percent of Teachers in Each Experience Category Who Used AV Media			
	1-3 Years	4-9 Years	10-19 Years	20+ Years
Science	95.6	96.4	91.0	96.8
Social studies	93.6	91.6	92.2	85.5
Fine arts	84.4	93.0	94.8	88.0
Language	94.1	88.7	93.1	83.3
English	82.0	88.9	83.0	83.8
Mathematics	51.8	44.7	49.4	35.2

TABLE A-34

Comparison of Use of Audiovisual Media for Selected Elementary Grades by Type of Audiovisual Training

Grade Taught	*Percent of Teachers in Each Training Category Who Used AV Media* *No Training*	*College*	*Inservice*	*College and Inservice*
K-3	*92*	*85*	*95*	*99*
4-6	*93*	*97*	*97*	*98*
7-9	*84*	*92*	*85*	*94*

TABLE A-35

Comparison of Use of Audiovisual Media for Selected Secondary Subjects by Type of Audiovisual Training

Subject Taught	*Percent of Teachers in Each Training Category Who Used AV Media* *No Training*	*College*	*Inservice*	*College and Inservice*
Science	*95*	*95*	*95*	*92*
Social studies	*86*	*92*	*92*	*98*
Fine arts	*81*	*91*	*96*	*[ ]*
Language	*85*	*95*	*83*	*[ ]*
English	*82*	*86*	*90*	*92*
Mathematics	*40*	*47*	*61*	*61*

TABLE A-36

Use of 16mm Films—Elementary Teachers by Grade Taught (Grades listed in order of use)

		Percent of Teachers in Use Category				
		Number of Times Used in Semester				
Grade Taught	*Number of Teachers*	0	1-5	6-9	10-19	20+
Total	4,166	28.1	27.1	12.6	21.4	10.8
4-6	1,567	20.5	26.6	13.8	25.5	13.6
K-3	2,114	30.5	27.0	12.5	20.1	9.9
7-9	309	33.4	33.6	12.6	14.9	5.5
1-6, 1-8	176	55.7	21.0	3.9	12.0	7.4

TABLE A-37

Use of 16mm Films—Secondary Teachers by Subject Taught (Subjects listed in order of use)

		Percent of Teachers in Use Category				
		Number of Times Used in Semester				
Subject Taught	*Number of Teachers*	0	1-5	6-9	10-19	20+
Total	6,464	45.8	28.0	9.4	11.5	5.3
Science	735	17.3	26.8	15.4	24.5	16.0
Social studies	894	24.9	32.2	15.9	18.8	8.2
Applied arts	1,274	39.2	28.9	11.9	13.6	6.4
P.E., Guidance	747	45.0	30.6	9.1	12.0	3.3
Fine arts	406	52.2	30.6	7.9	6.1	3.2
English	1,219	59.6	27.6	5.1	6.2	1.5
Language	427	63.7	28.1	3.3	3.4	1.5
Mathematics	762	75.2	17.6	3.3	3.2	0.7

TABLE A-38

Use of Filmstrips—Elementary Teachers by Grade Taught (Grades listed in order of use)

		Percent of Teachers in Use Category				
		Number of Times Used in Semester				
Grade Taught	*Number of Teachers*	0	1-5	6-9	10-19	20+
Total	4,166	27.4	29.8	12.9	19.6	10.3
4-6	1,567	24.3	28.7	12.6	21.6	12.8
K-3	2,114	26.5	31.5	13.8	19.3	8.9
7-9	309	40.2	28.4	9.7	15.2	6.5
1-6, 1-8	176	42.8	21.0	11.9	13.5	10.8

TABLE A-39

Use of Filmstrips—Secondary Teachers by Subject Taught (Subjects listed in order of use)

		Percent of Teachers in Use Category				
		Number of Times Used in Semester				
Subject Taught	*Number of Teachers*	0	1-5	6-9	10-19	20+
Total	6,464	59.3	24.5	5.5	7.1	3.6
Science	735	38.1	30.4	10.9	13.2	7.4
Social studies	894	44.5	33.2	6.0	12.2	4.0
Applied arts	1,274	53.1	25.4	7.8	9.0	4.7
P.E., Guidance	747	63.7	23.2	4.6	4.8	3.8
Language	427	68.3	21.8	2.6	5.0	2.3
English	1,219	68.6	22.4	3.0	3.8	2.2
Fine arts	406	68.8	18.7	3.9	4.9	3.7
Mathematics	762	77.7	15.4	3.4	2.5	1.0

TABLE A-40

Use of Records—Elementary Teachers by Grade Taught (Grades listed in order of use)

		Percent of Teachers in Use Category				
		Number of Times Used in Semester				
Grade Taught	*Number of Teachers*	0	1-5	6-9	10-19	20+
Total	4,166	*24.1*	*18.6*	*8.7*	*19.7*	*28.9*
K-3	2,114	*18.5*	*13.1*	*8.0*	*20.6*	*39.8*
4-6	1,567	*24.7*	*25.7*	*10.7*	*20.8*	*18.1*
1-6, 1-8	176	*34.6*	*9.1*	*6.8*	*15.3*	*34.2*
7-9	309	*54.7*	*24.3*	*4.9*	*9.0*	*8.1*

TABLE A-41

Use of Records—Secondary Teachers by Subject Taught (Subjects listed in order of use)

		Percent of Teachers in Use Category				
		Number of Times Used in Semester				
Subject Taught	*Number of Teachers*	0	1-5	6-9	10-19	20+
Total	6,464	*62.6*	*22.2*	*3.9*	*5.7*	*5.6*
Language	427	*33.4*	*28.6*	*5.9*	*16.6*	*15.5*
Fine arts	406	*35.5*	*16.0*	*6.9*	*12.4*	*29.2*
English	1,219	*37.3*	*39.6*	*8.3*	*10.7*	*4.1*
Social studies	894	*60.4*	*33.8*	*2.6*	*2.2*	*1.0*
P.E., Guidance	747	*70.4*	*12.8*	*3.5*	*5.0*	*8.3*
Applied arts	1,274	*71.4*	*17.1*	*3.1*	*4.1*	*4.3*
Science	735	*82.6*	*15.8*	*0.8*	*0.5*	*0.3*
Mathematics	762	*94.5*	*4.5*	—	*0.6*	*0.4*

TABLE A-42

Use of Tape Recordings (Other Than Language Arts)—Elementary Teachers by Grade Taught

(Grades listed in order of use)

Grade Taught	*Number of Teachers*	*Percent of Teachers in Use Category*				
			Number of Times Used in Semester			
		0	1-5	6-9	10-19	20+
Total	3,481[a]	*80.7*	*14.4*	*1.7*	*1.7*	*1.5*
4-6	1,290	*75.2*	*19.5*	*2.2*	*1.5*	*1.6*
1-6, 1-8	162	*80.9*	*12.3*	*0.6*	*3.1*	*3.1*
K-3	1,773	*84.2*	*11.1*	*1.5*	*1.8*	*1.4*
7-9	256	*84.3*	*12.5*	*0.4*	*1.6*	*1.2*

[a] This analysis was limited to teachers in schools which reported at least one tape recorder available in the school building.

TABLE A-43

Use of Tape Recordings (Other Than Language Arts)—Secondary Teachers by Subject Taught

(Subjects listed in order of use)

Subject Taught	*Number of Teachers*	*Percent of Teachers in Use Category*				
			Number of Times Used in Semester			
		0	1-5	6-9	10-19	20+
Total	6,464	*85.6*	*10.0*	*1.1*	*1.7*	*1.6*
Fine arts	406	*58.1*	*17.0*	*4.9*	*10.1*	*9.9*
Social studies	894	*78.0*	*19.3*	*0.7*	*1.6*	*0.4*
English	1,219	*85.0*	*11.1*	*1.2*	*1.1*	*1.6*
P.E., Guidance	747	*87.9*	*8.2*	*0.9*	*1.6*	*1.4*
Applied arts	1,274	*88.4*	*7.4*	*0.9*	*1.2*	*2.1*
Science	735	*89.1*	*9.4*	*1.0*	*0.4*	*0.1*
Language	427	*90.7*	*5.8*	*0.7*	*1.6*	*1.2*
Mathematics	762	*97.4*	*2.2*	—	*0.4*	—

TABLE A-44

Use of Tapes for Language Arts—Elementary Teachers by Grade Taught (Grades listed in order of use)

Grade Taught	Number of Teachers	Percent of Teachers in Use Category				
		Number of Times Used in Semester				
		0	1-5	6-9	10-19	20+
Total	3,481[a]	81.4	13.8	1.4	1.9	1.5
4-6	1,290	73.3	19.1	1.9	3.2	2.5
7-9	256	83.5	12.5	2.0	1.2	0.8
1-6, 1-8	162	85.2	8.6	1.2	2.5	2.5
K-3	1,773	86.7	10.5	1.0	1.1	0.7

[a] This analysis was limited to teachers in schools which reported at least one tape recorder available in the school building.

TABLE A-45

Use of Tapes for Language Arts—Secondary Teachers for Language and English Only

Subject Taught	Number of Teachers	Percent of Teachers in Use Category				
		Number of Times Used in Semester				
		0	1-5	6-9	10-19	20+
Total	1,646	67.6	13.1	2.9	5.7	10.7
Language	427	31.6	15.0	5.6	15.0	32.8
English	1,219	80.3	12.4	1.9	2.5	2.9

TABLE A-46

Use of Television—Elementary Teachers by Grade Taught

(Grades listed in order of use)

Grade Taught	*Number of Teachers*	*Percent of Teachers in Use Category*				
		Number of Times Used in Semester				
		0	1-5	6-9	10-19	20+
Total	1,895[a]	*43.2*	*30.5*	*4.0*	*9.8*	*12.5*
4-6	718	*28.5*	*34.1*	*4.0*	*12.1*	*21.3*
7-9	99	*50.6*	*43.4*	*4.0*	*1.0*	*1.0*
K-3	970	*51.1*	*27.6*	*4.0*	*9.5*	*7.8*
1-6, 1-8	108	*62.1*	*22.2*	*3.7*	*5.5*	*6.5*

[a] This analysis was limited to teachers in schools which reported at least one television set in the school building.

TABLE A-47

Use of Television—Secondary Teachers by Subject Taught

(Subjects listed in order of use)

Subject Taught	*Number of Teachers*	*Percent of Teachers in Use Category*				
		Number of Times Used in Semester				
		0	1-5	6-9	10-19	20+
Total	3,817[a]	*80.9*	*16.3*	*0.9*	*1.3*	*0.6*
Social studies	523	*64.4*	*29.6*	*1.3*	*3.2*	*1.5*
Science	437	*68.7*	*26.8*	*1.1*	*2.5*	*0.9*
English	689	*75.0*	*20.8*	*2.0*	*1.5*	*0.7*
Fine arts	252	*83.3*	*13.9*	*0.8*	*2.0*	—
P.E., Guidance	466	*87.4*	*11.1*	*0.4*	*0.9*	*0.2*
Language	283	*88.6*	*9.5*	*0.4*	*1.1*	*0.4*
Mathematics	445	*90.8*	*8.1*	*0.2*	*0.2*	*0.7*
Applied arts	722	*91.6*	*7.9*	*0.4*	—	*0.1*

[a] This analysis was limited to teachers in schools which reported at least one television set in the school building.

TABLE A-48

Use of Radio—Elementary Teachers by Grade Taught (Grades listed in order of use)

		Percent of Teachers in Use Category				
		Number of Times Used in Semester				
Grade Taught	*Number of Teachers*	0	1-5	6-9	10-19	20+
Total	4,166	67.8	24.5	1.8	4.1	1.8
4-6	1,567	58.8	30.9	2.2	6.5	1.6
7-9	309	68.0	27.8	1.0	2.2	1.0
K-3	2,114	73.6	20.0	1.5	2.7	2.2
1-6, 1-8	176	84.0	10.4	2.8	1.7	1.1

TABLE A-49

Use of Radio—Secondary Teachers by Subject Taught (Subjects listed in order of use)

		Percent of Teachers in Use Category				
		Number of Times Used in Semester				
Subject Taught	*Number of Teachers*	0	1-5	6-9	10-19	20+
Total	6,464	85.6	13.3	0.5	0.5	0.1
Social studies	894	68.8	28.7	1.7	0.6	0.2
English	1,219	80.9	17.3	0.7	0.8	0.3
Science	735	81.3	18.3	0.1	0.3	—
Fine arts	406	89.0	9.1	1.2	0.7	—
Mathematics	762	91.9	7.5	0.1	0.5	—
Language	427	92.4	6.4	0.5	0.7	—
Applied arts	1,274	92.6	7.0	0.1	0.1	0.2
P.E., Guidance	747	92.8	6.4	0.3	0.4	0.1

TABLE A-50

Use of Opaque Projector—Elementary Teachers by Grade Taught (Grades listed in order of use)

Grade Taught	*Number of Teachers*	*Percent of Teachers in Use Category*				
		Number of Times Used in Semester				
		0	1-5	6-9	10-19	20+
Total	2,912[a]	*68.2*	*23.4*	*3.2*	*3.5*	*1.7*
4-6	1,085	*55.2*	*32.0*	*4.9*	*5.8*	*2.1*
7-9	236	*67.7*	*21.2*	*6.4*	*3.0*	*1.7*
1-6, 1-8	133	*71.6*	*18.0*	*3.7*	*4.5*	*2.2*
K-3	1,458	*77.7*	*17.8*	*1.4*	*1.7*	*1.4*

[a] This analysis was limited to teachers in schools which reported at least one opaque projector available in the school building.

TABLE A-51

Use of Opaque Projector—Secondary Teachers by Subject Taught (Subjects listed in order of use)

Subject Taught	*Number of Teachers*	*Percent of Teachers in Use Category*				
		Number of Times Used in Semester				
		0	1-5	6-9	10-19	20+
Total	5,189[a]	*85.1*	*11.4*	*1.2*	*1.5*	*0.8*
Science	591	*76.3*	*18.3*	*1.0*	*2.9*	*1.5*
Social studies	708	*80.7*	*16.2*	*0.7*	*1.3*	*1.1*
English	970	*82.6*	*13.0*	*2.0*	*1.6*	*0.8*
Fine arts	332	*82.9*	*10.8*	*2.1*	*3.0*	*1.2*
Applied arts	1,000	*86.6*	*10.0*	*1.7*	*1.0*	*0.7*
Language	358	*90.5*	*7.0*	*0.8*	*1.4*	*0.3*
P.E., Guidance	618	*92.7*	*6.3*	*0.2*	*0.5*	*0.3*
Mathematics	612	*93.4*	*3.9*	*0.8*	*1.6*	*0.3*

[a] This analysis was limited to teachers in schools which reported at least one opaque projector available in the school building.

TABLE A-52

Use of 2 x 2 Slides—Elementary Teachers by Grade Taught (Grades listed in order of use)

Grade Taught	*Number of Teachers*	*Percent of Teachers in Use Category*				
		Number of Times Used in Semester				
		0	1-5	6-9	10-19	20+
Total	4,166	*83.6*	*14.3*	*1.3*	*0.6*	*0.2*
4-6	1,567	*76.7*	*19.9*	2.2	*0.7*	0.5
7-9	309	*83.4*	*14.4*	0.6	*1.0*	0.6
1-6, 1-8	176	*88.1*	*8.5*	2.8	0.6	—
K-3	2,114	*88.2*	*10.7*	0.5	0.5	0.1

TABLE A-53

Use of 2 x 2 Slides—Secondary Teachers by Subject Taught (Subjects listed in order of use)

Subject Taught	*Number of Teachers*	*Percent of Teachers in Use Category*				
		Number of Times Used in Semester				
		0	1-5	6-9	10-19	20+
Total	6,464	*86.4*	*11.1*	*1.0*	*1.0*	0.5
Language	427	73.2	22.0	2.3	1.6	0.9
Science	735	77.2	18.3	1.1	2.3	1.1
Fine arts	406	80.7	11.6	2.0	3.7	2.0
Social studies	894	81.5	16.0	1.3	0.9	0.3
English	1,219	88.6	10.3	0.7	0.4	—
Applied arts	1,274	88.7	9.3	0.9	0.8	0.3
P.E., Guidance	747	94.9	4.4	0.3	0.3	0.1
Mathematics	762	97.1	2.2	0.3	0.3	0.1

TABLE A-54

Use of Overhead Projector—Elementary Teachers by Grade Taught (Grades listed in order of use)

Grade Taught	Number of Teachers	Percent of Teachers in Use Category				
		Number of Times Used in Semester				
		0	1-5	6-9	10-19	20+
Total	1,044[a]	85.9	10.7	1.0	1.4	1.0
7-9	115	81.7	11.3	0.9	2.6	3.5
4-6	387	81.9	13.7	1.3	1.8	1.3
K-3	496	89.3	8.7	0.8	1.0	0.2
1-6, 1-8	46	91.3	6.5	2.2	—	—

[a] This analysis was limited to teachers in schools which reported at least one overhead projector available in the school building.

TABLE A-55

Use of Overhead Projector—Secondary Teachers by Subject Taught (Subjects listed in order of use)

Subject Taught	Number of Teachers	Percent of Teachers in Use Category				
		Number of Times Used in Semester				
		0	1-5	6-9	10-19	20+
Total	4,188[a]	89.3	6.6	0.8	1.5	1.8
Science	476	72.7	15.5	2.3	4.2	5.3
Mathematics	485	86.9	6.4	0.6	1.6	4.5
Social studies	573	88.8	7.3	1.1	1.1	1.7
Fine arts	270	90.4	6.3	0.7	1.9	0.7
English	785	91.6	6.4	0.5	1.0	0.5
Applied arts	797	92.8	4.3	0.5	1.1	1.3
P.E., Guidance	494	93.3	4.9	0.4	1.0	0.4
Language	308	97.5	1.6	—	0.6	0.3

[a] This analysis was limited to teachers in schools which reported at least one overhead projector available in the school building.

TABLE A-56

Frequency with Which Audiovisual Media Are Used for Various Purposes Elementary Teachers by Grade Taught

Grade Taught	*Number of Teachers*	*Index of Use[a] for*				
		Motivation	*Enrichment*	*Review*	*Direct Teaching*	*Cultural Activity*
Total	4,166	1.7	1.5	2.0	2.0	2.1
K-3	2,114	1.7	1.5	2.0	2.0	2.0
4-6	1,567	1.7	1.4	1.9	2.0	2.1
7-9	309	1.9	1.7	2.2	2.2	2.4
1-6, 1-8	176	1.7	1.7	2.2	2.0	2.0

[a] The index represents a weighted score on a scale from 1-4 in which 1 is *very often;* 2 is *sometimes;* 3 is *seldom;* 4 is *never.*

TABLE A-57

Frequency with Which Audiovisual Media Are Used for Various Purposes Secondary Teachers by Subject Taught

Subject Taught	*Number of Teachers*	*Index of Use[a] for*				
		Motivation	*Enrichment*	*Review*	*Direct Teaching*	*Cultural Activity*
Total	6,464	2.1	1.8	2.4	2.3	2.5
Science	735	1.9	1.4	2.0	2.1	2.8
Social studies	894	1.9	1.6	2.3	2.2	2.3
Fine arts	406	1.9	1.7	2.5	2.1	1.8
Language	427	2.0	1.7	2.3	2.5	1.8
English	1,219	2.2	1.8	2.6	2.5	2.3
Applied arts	1,274	2.0	1.8	2.4	2.2	2.8
P.E., Guidance	747	2.0	1.9	2.5	2.2	2.7
Mathematics	762	2.7	2.5	2.9	2.8	3.2

[a] The index represents a weighted score on a scale from 1-4 in which 1 is *very often;* 2 is *sometimes;* 3 is *seldom;* 4 is *never.*

TABLE A-58

Comparison of Major Problems in Using Audiovisual Media Elementary Principals for All District Sizes (Problems listed in order of choice)

	Percent of Principals Reporting Problem in Each Size Category				
Type of Problem	2	3	4	5	6, 7, 8
Number of Principals	40	68	70	70	60
Too little preview time	52.5	70.6	62.5	74.3	71.7
Poor classroom setup	47.5	55.9	59.6	51.1	68.3
Few good materials	60.0	52.9	62.5	39.8	50.0
Media not available when needed	32.5	45.6	46.9	52.5	43.3
Too little information	25.0	38.2	25.6	36.9	40.0
Difficult to integrate materials	25.0	27.9	24.1	28.4	38.3
Not enough basic teaching time	7.5	26.5	25.6	15.6	23.3
Students see as entertainment	7.5	17.6	15.6	25.7	26.7
Too much "red tape"	—	10.3	9.9	19.9	18.3
Aids too expensive	7.5	4.4	8.5	9.9	15.0
Difficult to operate equipment	2.5	5.9	7.1	14.2	1.7
Equipment in poor repair	2.5	4.4	12.8	4.3	8.3
Have no difficulties using AV	12.5	5.9	7.1	5.7	5.0

TABLE A-59

Comparison of Major Problems in Using Audiovisual Media Elementary AV Coordinators for All District Sizes (Problems listed in order of choice)

	Percent of Coordinators Reporting Problem in Each Size Category				
Type of Problem	2	3	4	5	6, 7, 8
Number of Coordinators	26	34	27	24	23
Too little preview time	69.2	79.4	70.4	70.8	78.3
Poor classroom setup	50.0	58.8	63.0	37.5	65.2
Few good materials	50.0	52.9	55.6	54.2	52.2
Media not available when needed	34.6	44.1	40.7	41.7	56.5
Too little information	30.8	29.4	29.6	29.2	30.4
Difficult to integrate materials	19.2	20.6	25.9	20.8	39.1
Not enough basic teaching time	23.1	17.6	25.9	8.3	26.1
Students see as entertainment	11.5	14.7	25.9	16.7	30.4
Aids too expensive	7.7	2.9	11.1	8.3	21.7
Difficult to operate equipment	7.7	5.9	14.8	—	4.3
Equipment in poor repair	3.8	—	7.4	8.3	13.0
Too much "red tape"	—	—	14.8	4.2	8.7
Have no difficulties using AV	7.7	5.9	3.7	8.3	4.3

TABLE A-60

Comparison of Major Problems in Using Audiovisual Media
Elementary Teachers for All Grade Levels
(Problems listed in order of choice)

	Percent of Teachers Who Have Problem			
Type of Problem	K-3	4-6	7-9	1-6, 1-8
Number of Teachers	2,114	1,567	309	176
Too little preview time	*59.7*	*64.0*	*63.5*	*53.3*
Poor classroom setup	*42.1*	*44.2*	*54.3*	*42.6*
Media not available when needed	*43.1*	*44.5*	*47.3*	*35.2*
Too little information	*26.7*	*25.7*	*31.7*	*28.4*
Not enough basic teaching time	*24.7*	*24.8*	*31.7*	*24.4*
Too much "red tape"	*23.5*	*21.8*	*31.4*	*20.4*
Few good materials	*22.1*	*15.7*	*33.6*	*30.1*
Students see as entertainment	*15.9*	*21.8*	*34.2*	*21.6*
Difficult to integrate materials	*15.5*	*13.3*	*19.7*	*15.9*
Difficult to operate equipment	*11.9*	*8.3*	*10.0*	*9.6*
Equipment in poor repair	*7.7*	*10.0*	*17.1*	*10.8*
Aids too expensive	*8.6*	*8.1*	*12.3*	*10.8*
Have no difficulties using AV	*8.5*	*7.9*	*3.5*	*7.4*

TABLE A-61

Comparison of Major Problems in Using Audiovisual Media
Secondary Principals for All District Sizes
(Problems listed in order of choice)

	Percent of Principals Reporting Problem in Each Size Category				
Type of Problem	2	3	4	5	6, 7, 8
Number of Principals	25	33	47	58	46
Too little preview time	*65.4*	*75.8*	*72.3*	*72.4*	*65.2*
Few good materials	*53.8*	*72.7*	*61.5*	*65.4*	*69.6*
Poor classroom setup	*53.8*	*60.6*	*44.5*	*53.3*	*71.7*
Media not available when needed	*30.7*	*51.5*	*53.0*	*51.6*	*63.0*
Difficult to integrate materials	*42.2*	*42.4*	*36.0*	*46.4*	*63.0*
Too little information	*30.7*	*48.5*	*31.8*	*32.7*	*47.8*
Students see as entertainment	*11.5*	*30.3*	*33.9*	*27.5*	*30.4*
Not enough basic teaching time	*23.0*	*15.2*	*10.6*	*20.6*	*13.0*
Too much "red tape"	*15.4*	*18.2*	*10.6*	*15.5*	*13.0*
Aids too expensive	*3.8*	*18.2*	*8.5*	*12.0*	*13.0*
Equipment in poor repair	—	*6.1*	*8.5*	*8.6*	*10.9*
Difficult to operate equipment	—	*9.1*	*2.1*	*3.4*	*2.1*
Have no difficulties using AV	—	—	—	*1.7*	—

TABLE A-62

Comparison of Major Problems in Using Audiovisual Media
Secondary AV Coordinators for All District Sizes
(Problems listed in order of choice)

	Percent of Coordinators Reporting Problem in Each Size Category				
Type of Problem	2	3	4	5	6, 7, 8
Number of Coordinators	21	29	41	43	23
Too little preview time	57.1	65.5	73.2	74.4	78.3
Poor classroom setup	76.2	72.4	58.5	65.1	82.6
Few good materials	66.7	69.0	61.0	65.2	69.6
Media not available when needed	47.6	48.3	34.1	46.5	73.9
Difficult to integrate materials	42.9	34.5	19.5	55.8	60.9
Too little information	42.9	24.1	41.5	41.9	47.8
Students see as entertainment	28.6	31.0	19.5	20.9	34.8
Not enough basic teaching time	9.5	20.7	14.6	23.3	30.4
Too much "red tape"	—	20.7	2.4	25.6	30.4
Aids too expensive	—	10.4	9.8	18.6	30.4
Equipment in poor repair	4.8	13.8	12.2	11.6	8.7
Difficult to operate equipment	—	—	12.2	9.3	—
Have no difficulties using AV	4.8	—	4.9	2.3	—

TABLE A-63

Comparison of Major Problems in Using Audiovisual Media
Secondary Teachers for Four Highest Use Subjects
(Problems listed in order of choice)

	Percent of Teachers Who Have Problem			
Type of Problem	*Science*	*Social Studies*	*Fine Arts*	*Language*
Number of Teachers	735	894	406	427
Too little preview time	65.9	67.8	57.0	69.9
Media not available when needed	49.8	55.5	46.5	40.0
Poor classroom setup	38.5	49.6	53.0	45.9
Too much "red tape"	32.9	37.8	33.7	35.6
Students see as entertainment	31.3	37.4	20.4	35.8
Not enough basic teaching time	23.6	27.4	25.9	40.3
Too little information	22.6	31.8	26.8	26.9
Few good materials	17.0	20.5	37.7	31.6
Difficult to integrate materials	20.1	21.2	21.4	27.2
Aids too expensive	13.5	14.0	10.8	23.8
Equipment in poor repair	11.6	16.3	15.5	9.6
Difficult to operate equipment	3.3	6.6	7.4	16.2
Have no difficulties using AV	6.8	5.8	5.4	6.8

TABLE A-64

Comparison of Major Problems in Using Audiovisual Media Secondary Teachers for Four Lowest Use Subjects (Problems listed in order of choice)

	Percent of Teachers Who Have Problem			
Type of Problem	*English*	*Applied Arts*	*P.E., Guidance*	*Mathematics*
Number of Teachers	1,219	1,274	747	762
Too little preview time	66.8	59.8	54.5	59.1
Poor classroom setup	51.6	53.0	53.5	48.3
Media not available when needed	48.5	47.7	41.1	40.7
Few good materials	17.8	30.1	31.2	68.4
Too much "red tape"	37.2	33.0	28.5	30.1
Students see as entertainment	33.5	31.8	27.5	37.3
Not enough basic teaching time	35.5	24.8	23.0	38.8
Too little information	35.7	22.1	25.0	35.2
Difficult to integrate materials	26.1	22.3	21.1	52.2
Aids too expensive	19.6	13.5	12.1	26.4
Equipment in poor repair	17.8	14.8	12.9	8.1
Difficult to operate equipment	13.6	8.9	6.2	5.8
Have no difficulties using AV	3.5	5.1	4.7	2.4

TABLE A-65

Comparison of Plans for Increased Use of Audiovisual Media Elementary Principals for All District Sizes

	Percent of Principals Who Plan To Increase Use[a] in Each Size Category				
Media	2	3	4	5	6, 7, 8
Number of Principals	40	68	70	70	60
16mm films	20.0	14.7	21.4	25.8	26.7
Filmstrips	22.5	32.4	38.5	37.1	56.6
Records	30.0	25.0	21.4	22.8	28.3
Tapes, language	47.5	52.9	31.5	47.1	48.4
Tapes, general	52.5	54.5	32.8	48.6	51.7
Broadcast television	30.0	25.0	30.3	24.3	30.0
Radio	17.5	14.7	14.2	11.5	18.4
Opaque projector	37.5	36.8	28.6	40.0	41.6
2 x 2 slides	27.5	30.9	20.0	27.2	20.0
Overhead projector	37.5	32.4	31.5	40.0	26.7
Teaching machine	15.0	13.3	12.9	15.7	10.0
Closed-circuit television	25.0	22.1	21.4	37.1	21.7

[a] "Increase use" is defined as either planning to try a medium or to emphasize the use of a medium. Respondents who checked "continue present use," "no plan to try," or did not answer were considered as desiring to maintain the status quo.

TABLE A-66

Comparison of Plans for Increased Use of Audiovisual Media
Elementary AV Coordinators for All District Sizes

Media	*Percent of Coordinators Who Plan To Increase Use[a] in Each Size Category*				
	2	3	4	5	6, 7, 8
Number of Coordinators	26	34	27	24	23
16mm films	*26.9*	*23.5*	*14.8*	*16.6*	*21.7*
Filmstrips	*38.5*	*35.3*	*44.5*	*37.4*	*47.8*
Records	*26.9*	*26.4*	*22.2*	*16.6*	*34.8*
Tapes, language	*50.0*	*70.7*	*48.1*	*62.4*	*56.6*
Tapes, general	*34.6*	*76.5*	*51.8*	*62.5*	*60.9*
Broadcast television	*46.2*	*61.8*	*44.4*	*37.5*	*52.0*
Radio	*23.0*	*32.4*	*33.3*	*12.5*	*39.1*
Opaque projector	*38.5*	*53.0*	*55.5*	*45.9*	*56.6*
2 x 2 slides	*38.4*	*47.1*	*51.8*	*29.1*	*43.5*
Overhead projector	*53.8*	*61.7*	*70.4*	*70.8*	*56.5*
Teaching machine	*57.7*	*61.8*	*66.7*	*70.9*	*65.2*
Closed-circuit television	*69.3*	*67.7*	*66.7*	*66.6*	*60.9*

[a] "Increase use" is defined as either planning to try a medium or to emphasize the use of a medium. Respondents who checked "continue present use," "no plan to try," or did not answer were considered as desiring to maintain the status quo.

TABLE A-67

Comparison of Plans for Increased Use of Audiovisual Media
Elementary Teachers for All Grade Levels

Media	*Percent of Teachers Who Plan To Increase Use[a]*			
	K-3	4-6	7-9	1-6, 1-8
Number of Teachers	2,114[b]	1,567	309	176
16mm films	*20.8*	*18.6*	*22.4*	*23.3*
Filmstrips	*28.5*	*24.3*	*28.1*	*24.4*
Records	*15.2*	*20.0*	*15.5*	*21.6*
Tapes, general[b]	*27.3*	*26.4*	*19.1*	*24.0*
Broadcast television[b]	*17.7*	*16.6*	*25.2*	*15.7*
Radio	*13.9*	*14.9*	*14.9*	*8.0*
Opaque projector[b]	*28.2*	*24.3*	*26.7*	*17.3*
2 x 2 slides	*15.3*	*19.4*	*16.1*	*12.5*
Overhead projector[b]	*28.6*	*33.1*	*28.7*	*19.6*
Teaching machine	*7.6*	*9.8*	*8.1*	*9.3*

[a] "Increase use" is defined as either planning to try a medium or to emphasize the use of a medium. Respondents who checked "continue present use," "no plan to try," or did not answer were considered as desiring to maintain the status quo.

[b] These percentages were computed only for teachers in schools which have the item of equipment in the school building:

Tapes, general, K-3 (N = 1,773), 4-6 (N = 1,290), 7-9 (N = 256), 1-6, 1-8 (N = 162)
Broadcast TV, K-3 (N = 970), 4-6 (N = 718), 7-9 (N = 99), 1-6, 1-8 (N = 108)
Opaque projector, K-3 (N = 1,458), 4-6 (N = 1,085), 7-9 (N = 236), 1-6, 1-8 (N = 133)
Overhead projector, K-3 (N = 496), 4-6 (N = 387), 7-9 (N = 115), 1-6, 1-8 (N = 46).

TABLE A-68

Comparison of Plans for Increased Use of Audiovisual Media Secondary Principals for All District Sizes

Media	*Percent of Principals Who Plan To Increase Use[a] in Each Size Category* 2	3	4	5	6, 7, 8
Number of Principals	25	33	47	58	46
16mm films	*16.0*	*27.3*	*17.0*	*24.1*	*19.6*
Filmstrips	*32.0*	*54.5*	*23.4*	*43.1*	*39.1*
Records	*28.0*	*21.2*	*27.7*	*27.6*	*23.9*
Tapes, language	*52.0*	*66.7*	*49.0*	*65.6*	*54.3*
Tapes, general	*52.0*	*42.4*	*42.6*	*50.0*	*50.0*
Broadcast television	*36.0*	*42.4*	*42.5*	*37.9*	*26.1*
Radio	*24.0*	*9.1*	*10.7*	*12.1*	*13.1*
Opaque projector	*36.0*	*45.5*	*34.1*	*46.6*	*32.6*
2 x 2 slides	*24.0*	*27.3*	*31.9*	*19.0*	*26.0*
Overhead projector	*48.0*	*60.6*	*63.8*	*60.4*	*47.9*
Teaching machine	*16.0*	*24.2*	*19.2*	*20.7*	*6.5*
Closed-circuit television	*28.0*	*42.5*	*44.7*	*51.7*	*37.0*

[a] "Increase use" is defined as either planning to try a medium or to emphasize the use of a medium. Respondents who checked "continue present use," "no plan to try," or did not answer were considered as desiring to maintain the status quo.

TABLE A-69

Comparison of Plans for Increased Use of Audiovisual Media Secondary AV Coordinators for All District Sizes

Media	*Percent of Coordinators Who Plan To Increase Use[a] in Each Size Category* 2	3	4	5	6, 7, 8
Number of Coordinators	21	29	41	43	23
16mm films	*33.3*	*31.0*	*26.8*	*39.5*	*26.1*
Filmstrips	*42.9*	*44.8*	*46.4*	*60.5*	*47.8*
Records	*33.3*	*34.5*	*39.0*	*44.2*	*30.4*
Tapes, language	*52.4*	*41.4*	*46.3*	*67.4*	*56.5*
Tapes, general	*57.1*	*34.5*	*61.0*	*65.1*	*60.9*
Broadcast television	*71.4*	*62.1*	*65.9*	*53.4*	*60.9*
Radio	*57.1*	*34.5*	*31.8*	*37.2*	*30.5*
Opaque projector	*47.6*	*58.6*	*51.3*	*53.5*	*60.9*
2 x 2 slides	*57.2*	*48.2*	*48.8*	*44.1*	*61.0*
Overhead projector	*66.6*	*72.4*	*62.4*	*65.1*	*78.3*
Teaching machine	*76.2*	*65.5*	*85.4*	*81.4*	*82.7*
Closed-circuit television	*71.4*	*79.3*	*78.1*	*53.5*	*87.0*

[a] "Increase use" is defined as either planning to try a medium or to emphasize the use of a medium. Respondents who checked "continue present use," "no plan to try," or did not answer were considered as desiring to maintain the status quo.

TABLE A-70

Comparison of Plans for Increased Use of Audiovisual Media
Secondary Teachers for Four Highest Use Subjects

Media	*Percent of Teachers Who Plan To Increase Use*[a]			
	Science	*Social Studies*	*Fine Arts*	*Language*
Number of Teachers	735	894	406	427
16mm films	*22.3*	*21.9*	*22.7*	*24.4*
Filmstrips	*21.5*	*23.6*	*22.7*	*29.0*
Records	*12.4*	*24.9*	*21.5*	*22.9*
Tapes, language	—	—	—	*34.9*
Tapes, general	*9.9*	*20.2*	*20.9*	*7.4*
Broadcast television[b]	*19.9*	*23.9*	*21.8*	*13.8*
Radio	*11.5*	*15.1*	*13.6*	*10.1*
Opaque projector[b]	*22.2*	*14.1*	*17.4*	*12.0*
2 x 2 slides	*21.2*	*14.9*	*14.8*	*19.4*
Overhead projector[b]	*26.5*	*20.2*	*14.1*	*11.4*
Teaching machine	*8.0*	*5.0*	*3.2*	*6.6*

[a] "Increase use" is defined as either planning to try a medium or to emphasize the use of a medium. Respondents who checked "continue present use," "no plan to try," or did not answer were considered as desiring to maintain the status quo.

[b] These percentages were computed only for teachers in schools which have the item of equipment in the school building:

Broadcast TV, Science (N = 437), Social studies (N = 523), Fine arts (N = 252), Language (N = 283)
Opaque projector, Science (N = 591), Social studies (N = 708), Fine arts (N = 332), Language (N = 358)
Overhead projector, Science (N = 476), Social studies (N = 573), Fine arts (N = 270), Language (N = 308).

TABLE A-71

Comparison of Plans for Increased Use of Audiovisual Media Secondary Teachers for Four Lowest Use Subjects

	Percent of Teachers Who Plan To Increase Use[a]			
Media	*English*	*Applied Arts*	*P.E., Guidance*	*Mathematics*
Number of Teachers	1,219	1,274	747	762
16mm films	25.1	21.8	23.9	17.8
Filmstrips	23.9	22.6	23.3	24.8
Records	29.8	11.9	15.7	3.7
Tapes, language	22.2	—	—	—
Tapes, general	13.0	11.8	11.4	3.8
Broadcast television[b]	20.2	11.0	19.1	15.5
Radio	12.3	7.3	8.6	5.6
Opaque projector[b]	18.2	15.5	10.6	15.2
2 x 2 slides	10.2	12.6	10.0	6.4
Overhead projector[b]	12.9	16.9	12.3	21.2
Teaching machine	6.0	6.7	5.7	11.7

[a] "Increase use" is defined as either planning to try a medium or to emphasize the use of a medium. Respondents who checked "continue present use," "no plan to try," or did not answer were considered as desiring to maintain the status quo.

[b] These percentages were computed only for teachers in schools which have the item of equipment in the school building:

Broadcast TV, English (N = 689), Applied arts (N = 722), P.E., Guidance (N = 466), Mathematics (N = 445)

Opaque projector, English (N = 970), Applied arts (N = 1,000), P.E., Guidance (N = 618), Mathematics (N = 612)

Overhead projector, English (N = 785), Applied arts (N = 797), P.E., Guidance (N = 494), Mathematics (N = 485).

TABLE A-72

Distribution of Sample Public School Districts for Follow-up Survey by Geographic Region and District Size

		Number of Districts in Each Region[a]			
District Size	*Number of Districts*	*North Atlantic*	*Great Lakes, Plains*	*Southeast*	*West, Southwest*
Total	238	67	68	40	63
2 (12,000-24,999 pupils)	16	3	3	6	4
3 (6,000-11,999 pupils)	34	7	7	11	9
4 (3,000- 5,999 pupils)	56	15	12	15	14
5 (1,200- 2,999 pupils)	58	18	20	6	14
6 (600- 1,199 pupils)	30	9	11	1	9
7 (300- 599 pupils)	27	9	10	1	7
8 (150- 299 pupils)	17	6	5	—	6

[a] Regional categories are those commonly used by the U.S. Office of Education.

TABLE A-73

Change in Total Number of Teachers, Pupils, and Schools, 1961-1964 by District Size

	Teachers			*Pupils*			*Schools*		
District Size	*Number 1961*	*Number 1964*	*Percent Change*	*Number 1961*	*Number 1964*	*Percent Change*	*Number 1961*	*Number 1964*	*Percent Change*
Total	37,925	45,254	*19.3*	949,732	1,083,341	*14.1*	2,096	2,206	*5.2*
2	9,670	11,895	*23.0*	250,176	292,763	*17.0*	441	486	*10.2*
3	11,192	13,366	*19.4*	287,658	325,125	*13.0*	573	616	*7.5*
4	9,865	11,677	*18.4*	245,027	278,533	*13.7*	574	583	*1.6*
5	5,208	6,035	*15.9*	123,881	138,708	*12.0*	327	338	*3.4*
6	1,206	1,378	*14.3*	25,956	28,749	*10.8*	93	98	*5.4*
7	600	697	*16.2*	13,084	15,224	*16.4*	60	57	*—5.0*
8	184	206	*12.0*	3,950	4,239	*7.3*	28	28	*No Change*

TABLE A-74

Increase in Amount of Nine Items of Audiovisual Equipment, 1961-1964 by District Size

District Size	*Number of Districts*	*Percent Increase in Absolute Number of Units*								
		16mm Projector	*Slide-Filmstrip Projector*	*Record Player*	*Tape Recorder*	*Opaque Projector*	*Radio*	*Television Set*	*Overhead Projector*	*Language Laboratory*
Percent Increase (All Districts)	238	26.7	28.3	32.1	54.9	33.1	33.0	123.1	175.5	112.1
2	16	29.6	24.9	24.8	55.3	37.4	18.7	109.0	106.1	160.0
3	34	24.9	34.0	33.4	44.5	20.8	52.5	83.0	139.2	37.5
4	56	29.4	28.3	38.2	74.4	40.1	34.2	234.2	255.7	116.7
5	58	21.6	22.2	32.5	44.1	41.8	32.1	107.7	392.1	105.6
6	30	26.3	32.6	51.4	48.8	36.8	7.3	42.9	233.3	225.0
7	27	20.0	39.2	37.8	45.7	No Change	21.2	175.0	112.5	Indeterminate[a]
8	17	4.4	8.0	20.0	46.2	60.0	23.5	No Change	100.0	Indeterminate[a]

[a] None of the districts in the group reported a language laboratory in 1961; three reported such an installation in 1964.

TABLE A-75

Incidence of Ownership of Nine Items of Audiovisual Equipment, 1961 by District Size

District Size	Number of Districts	Percent of Districts Reporting Item								
		16mm Projector	*Slide-Filmstrip Projector*	*Record Player*	*Tape Recorder*	*Opaque Projector*	*Radio*	*Television Set*	*Overhead Projector*	*Language Laboratory*
Percent Ownership (All Districts)	238	99.6	93.7	98.3	95.4	84.9	67.6	54.6	46.6	27.7
2	16	100.0	100.0	100.0	100.0	100.0	87.5	81.2	87.5	37.5
3	34	100.0	94.1	100.0	100.0	100.0	91.2	82.4	61.8	44.1
4	56	100.0	94.6	100.0	100.0	92.9	69.6	57.1	50.0	41.1
5	58	98.3	96.6	96.6	98.3	93.1	67.2	60.3	48.3	31.0
6	30	100.0	86.7	96.7	96.7	80.0	53.3	43.3	43.3	13.3
7	27	100.0	88.9	100.0	85.2	63.0	51.9	25.9	22.2	—
8	17	100.0	94.1	94.1	70.6	29.4	47.1	11.8	5.9	—

TABLE A-76

Incidence of Ownership of Nine Items of Audiovisual Equipment, 1964 by District Size

District Size	Number of Districts	Percent of Districts Reporting Item								
		16mm Projector	*Slide-Filmstrip Projector*	*Record Player*	*Tape Recorder*	*Opaque Projector*	*Radio*	*Television Set*	*Overhead Projector*	*Language Laboratory*
Percent Ownership (All Districts)	238	100.0	97.5	100.0	97.9	89.9	76.5	68.1	79.0	51.7
2	16	100.0	100.0	100.0	100.0	100.0	81.2	81.2	100.0	81.2
3	34	100.0	100.0	100.0	100.0	100.0	97.1	94.1	91.2	55.9
4	56	100.0	94.6	100.0	100.0	94.6	82.1	80.4	92.9	67.8
5	58	100.0	98.3	100.0	100.0	98.3	74.1	72.4	84.5	60.3
6	30	100.0	90.0	100.0	100.0	93.3	56.7	56.7	83.3	40.0
7	27	100.0	100.0	100.0	92.6	63.0	59.3	40.7	48.1	11.1
8	17	100.0	100.0	100.0	82.4	47.1	64.7	12.0	11.8	17.6

TABLE A-77

Increase in Number of Units of Audiovisual Equipment per School, 1961-1964 by District Size

		Percent Reporting Increase in Number of Units per School								
District Size	*Number of Districts*	*16mm Projector*	*Slide-Filmstrip Projector*	*Record Player*	*Tape Recorder*	*Opaque Projector*	*Radio*	*Television Set*	*Overhead Projector*	*Language Labor-atory*[a]
Total	**238**	62.2	56.8	71.0	70.6	51.3	40.7	45.0	67.6	30.7
2	**16**	81.2	68.7	75.0	87.5	75.0	50.0	74.9	81.2	68.8
3	**34**	70.6	70.6	76.5	79.5	61.8	70.6	70.6	82.3	20.6
4	**56**	82.1	69.6	83.9	87.5	67.8	50.0	66.0	85.7	39.3
5	**58**	62.0	56.9	75.9	74.1	55.1	36.2	39.6	75.8	31.0
6	**30**	63.4	46.7	70.0	66.7	46.7	16.7	20.0	63.3	30.0
7	**27**	33.3	40.7	55.6	37.0	7.4	29.6	18.5	29.6	11.1
8	**17**	5.9	17.6	23.5	29.4	17.6	17.6	—	5.9	17.6

[a] Calculated on the number of secondary schools rather than the total number of schools in the district.

TABLE A-78

Type of District and Increase in Number of Units of Audiovisual Equipment per School, 1961-1964, for 232 Districts[a]

	Percent Reporting Increase for	
Equipment	*Elementary Districts*	*Combined Districts*
Number of Districts	32	200
16mm projector	*37.5*	*66.0*
Slide-filmstrip projector	*53.1*	*58.0*
Record player	*59.4*	*73.0*
Tape recorder	*65.6*	*72.0*
Opaque projector	*25.0*	*54.5*
Radio	*46.9*	*40.5*
Television set	*40.6*	*46.0*
Overhead projector	*50.0*	*70.0*
Language laboratory	*12.5*	*32.5*

[a] Six districts with only secondary schools were omitted from this analysis.

TABLE A-79

1960 Per Pupil Expenditure for Instructional Materials and Increase in Number of Units of Audiovisual Equipment per School, 1961-1964, for 235 Districts[a]

	Percent of Districts Reporting Increase When per Pupil Expenditure Was		
Equipment	$1-12	$13-22	$23+
Number of Districts	114	77	44
16mm projector	*68.4*	*54.5*	*61.4*
Slide-filmstrip projector	*60.5*	*54.5*	*54.5*
Record player	*75.4*	*74.0*	*54.5*
Tape recorder	*71.9*	*70.1*	*68.2*
Opaque projector	*54.4*	*48.0*	*50.0*
Radio	*46.5*	*39.0*	*31.8*
Television set	*46.5*	*52.0*	*27.3*
Overhead projector	*65.8*	*72.7*	*65.9*
Language laboratory (secondary schools only)	*30.9*	*31.8*	*43.9*

[a] Three districts did not report their 1960 instructional materials expenditure.

TABLE A-80

1961 Inventory Status and Plans for Future Use and Increase in Number of Units of Audiovisual Equipment per School, 1961-1964, for Five Media

	Plan To Increase Use		*Plan Status Quo*	
Equipment	*Number*	*Percent Which Increased Inventory*	*Number*	*Percent Which Increased Inventory*
Opaque projector:				
Had in 1961	75	*56.0*	127	*53.5*
Not have in 1961	16	*43.8*	20	*25.0*
Radio:				
Had in 1961	25	*52.0*	136	*46.3*
Not have in 1961	5	*20.0*	72	*27.8*
Television set:				
Had in 1961	45	*62.2*	85	*55.3*
Not have in 1961	26	*46.2*	82	*24.4*
Overhead projector:				
Had in 1961	52	*82.7*	59	*69.5*
Not have in 1961	52	*63.5*	75	*58.7*
Language laboratory (secondary schools only):				
Had in 1961	34	*26.5*	30	*20.0*
Not have in 1961	90	*48.9*	52	*19.2*

TABLE A-81

Correlation-Regression Characteristics for the Relation Between Increase in Equipment per School and Equipment per School

Equipment	$\overline{X}$	$\overline{Y}$	σ_x	σ_y	S_y	r
16mm projector	1.48	0.26	1.125	0.408	0.402	0.17*
Slide-filmstrip projector	1.49	0.30	1.165	0.573	0.571	0.06
Record player	4.37	1.12	3.983	1.957	1.957	0.00
Tape recorder	1.12	0.52	1.106	1.071	1.070	0.04
Opaque projector	0.51	0.13	0.470	0.319	0.315	−0.16*
Radio	0.86	0.23	4.319	0.660	0.660	0.01
Television set	0.46	0.48	0.714	1.153	1.129	0.20**
Overhead projector	0.20	0.42	0.375	0.791	0.741	0.35**
Language laboratory (secondary schools only)	0.20	0.21	0.359	0.369	0.356	−0.26**

Definition of terms:

$\overline{X}$ = Mean of the ratio of equipment per school for each district for 1961.
$\overline{Y}$ = Mean increase in the ratio of equipment per school for each district for 1961-1964.
σ_x = Standard deviation of the ratio of equipment per school.
σ_y = Standard deviation of the increase in the ratio of equipment per school.
S_y = Standard error of estimate of the mean increase in the ratio of equipment per school.
r = Correlation coefficient between ratio of equipment per school and increase in the ratio of equipment per school.

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* Significant at 5 percent level.
** Significant at 1 percent level.

TABLE A-82

Number of Teachers per Unit of Equipment, 1961, by District Size

			Number of Teachers per Unit of Equipment							
District Size	*Number of Districts*	*Number of Teachers*	*16mm Projector*	*Slide-Filmstrip Projector*	*Record Player*	*Tape Recorder*	*Opaque Projector*	*Radio*	*Television Set*	*Overhead Projector*
Total	238	37,925	11.0	12.1	3.8	15.5	33.8	19.5	35.5	86.8
2	16	9,670	11.8	11.5	3.0	13.4	30.4	17.0	28.9	59.0
3	34	11,192	12.9	12.9	3.8	16.0	34.2	23.3	33.4	93.3
4	56	9,865	12.9	12.0	4.1	17.0	35.6	17.8	48.1	112.0
5	58	5,208	12.0	12.0	4.5	17.0	38.9	20.7	33.6	137.0
6	30	1,206	12.2	12.7	5.7	14.7	31.7	29.4	43.1	67.0
7	27	600	10.9	11.8	4.0	17.1	27.3	18.2	75.0	75.0
8	17	184	8.0	7.4	4.6	14.2	36.8	10.8	92.0	184.0

TABLE A-83

"Ideal" Number of Teachers per Unit of Equipment, 1961, by District Size

District Size	Number of Districts	Number of Teachers	Ideal[a] Number of Teachers per Unit of Equipment							
			16mm Projector	Slide-Filmstrip Projector	Record Player	Tape Recorder	Opaque Projector	Radio	Television Set	Overhead Projector
Total	238	37,925	9.5	10.0	3.3	11.7	23.9	14.3	15.6	33.2
2	16	9,670	11.1	10.1	2.8	10.4	22.7	13.2	14.9	25.6
3	34	11,192	11.4	10.5	3.1	11.6	22.8	15.4	12.9	33.8
4	56	9,865	11.0	9.9	3.6	12.7	25.6	13.4	21.1	42.0
5	58	5,208	10.0	9.6	3.9	13.3	27.6	16.7	15.6	40.7
6	30	1,206	9.6	10.0	5.2	11.6	20.8	22.3	18.8	27.4
7	27	600	9.7	9.0	3.3	11.3	20.7	9.4	18.8	28.6
8	17	184	6.8	6.1	3.8	9.7	16.7	6.3	23.0	26.3

[a] "Ideal" is operationally defined as the number of teachers/number of units owned + number of additional units needed.

TABLE A-84

Number of Teachers per Unit of Equipment, 1964, by District Size

			Number of Teachers per Unit of Equipment							
District Size	*Number of Districts*	*Number of Teachers*	*16mm Projector*	*Slide-Filmstrip Projector*	*Record Player*	*Tape Recorder*	*Opaque Projector*	*Radio*	*Television Set*	*Overhead Projector*
Total	238	45,254	10.4	11.2	3.4	12.0	30.3	17.5	19.0	37.6
2	16	11,895	11.6	11.4	3.0	10.6	27.2	17.7	17.0	35.2
3	34	13,366	12.4	11.5	3.4	13.2	33.8	18.3	21.8	46.6
4	56	11,677	11.8	11.0	3.5	11.5	30.1	15.7	17.1	37.3
5	58	6,035	11.4	11.4	3.9	13.7	31.8	18.1	18.7	29.2
6	30	1,378	11.0	10.9	4.3	11.3	26.5	31.3	34.4	23.0
7	27	697	10.6	9.8	3.4	13.7	31.7	17.4	31.7	41.0
8	17	206	8.6	7.6	4.3	10.8	25.8	9.8	103.0	103.0

TABLE A-85

"Ideal" Number of Teachers per Unit of Equipment, 1964, by District Size

			Ideal[a] Number of Teachers per Unit of Equipment							
District Size	*Number of Districts*	*Number of Teachers*	*16mm Projector*	*Slide-Filmstrip Projector*	*Record Player*	*Tape Recorder*	*Opaque Projector*	*Radio*	*Television Set*	*Overhead Projector*
Total	238	45,254	8.7	9.3	3.0	9.4	24.1	12.3	10.0	14.8
2	16	11,895	9.6	9.9	2.6	8.4	24.6	9.9	7.0	13.9
3	34	13,366	10.2	9.1	3.0	10.0	25.5	14.5	12.7	15.1
4	56	11,677	10.1	9.0	2.9	9.2	23.4	12.5	10.9	15.1
5	58	6,035	10.0	9.5	3.5	10.6	23.0	13.0	10.1	12.2
6	30	1,378	9.4	8.8	3.8	9.1	19.7	17.9	18.1	14.2
7	27	697	9.6	8.4	2.8	11.6	23.2	12.2	22.5	13.2
8	17	206	6.9	6.1	3.6	8.2	20.6	9.8	34.3	20.6

[a] "Ideal" is operationally defined as the number of teachers/number of units owned + number of additional units needed.

TABLE A-86

Adoption of Five Newer Media by 1964, by District Size

		Percent Reporting Adoption of Each of the Newer Media by 1964				
District Size	*Number of Districts*	*Television Instruction*[a]	*Overhead Projector*	*Language Laboratory*	*Programed Text*	*Teaching Machine*
Total	**238**	*39.5*	*79.0*	*51.7*	*32.4*	*19.3*
2	**16**	*68.8*	*100.0*	*81.3*	*50.1*	*25.0*
3	**34**	*41.2*	*91.2*	*55.9*	*52.9*	*23.5*
4	**56**	*44.7*	*92.9*	*67.8*	*35.8*	*17.8*
5	**58**	*48.2*	*84.5*	*60.3*	*31.0*	*29.3*
6	**30**	*30.0*	*83.3*	*40.0*	*26.7*	*20.0*
7	**27**	*25.9*	*48.1*	*11.1*	*7.4*	—
8	**17**	—	*11.8*	*17.6*	*5.9*	*5.9*

[a] **Defined as a complete course or integral part of a course presented via television.**

TABLE A-87

1961 Plans and Reasons for Adoption of Five Newer Media

Reasons for Adoption	*Percent Citing Reason as Factor in Adoption*									
	Television Instruction		*Overhead Projector*		*Language Laboratory*		*Programed Text*		*Teaching Machine*	
	Planned	*Not Planned*	*Planned*	*Not Planned*	*Planned*	*Not Planned*	*Planned*	*Not Planned*	*Planned*	*Not Planned*
Number of Districts	24	26	34	43	46	12	37	40	18	28
Personal experience with technique	41.7	26.9	44.1	25.6	17.4	8.3	37.8	12.5	16.7	14.3
Observation of program in action	50.0	50.0	35.3	30.2	46.6	25.0	21.6	27.5	5.6	35.7
Talk with neighboring superintendents	20.8	—	8.8	9.3	15.2	25.0	2.7	10.0	5.6	14.3
Demonstrations at professional meetings	41.7	53.9	70.6	60.5	30.4	33.3	35.1	35.0	44.5	57.2
Demonstrations by manufacturer	—	—	41.2	34.9	23.9	41.7	24.3	22.5	44.5	35.7
Articles in professional journals	33.3	19.2	26.5	23.2	34.8	33.3	43.2	45.0	38.9	28.6
Technical or research reports	25.0	23.1	2.9	9.3	32.6	25.0	32.4	27.5	16.7	7.1
Speeches at professional meetings	20.8	23.1	17.6	9.3	13.0	25.0	18.9	17.5	38.9	10.7
Requests from teachers	33.3	38.5	32.4	51.2	51.2	50.0	40.5	42.5	22.2	28.6
Requests from administrators	8.3	23.1	8.8	16.3	19.6	25.0	10.8	30.0	—	17.9
Requests from school board	8.3	—	—	4.6	6.5	—	—	—	—	—
Requests from parents	—	—	—	2.3	2.2	—	2.7	—	—	—
No reasons given	—	7.7	—	2.3	—	—	5.4	2.5	16.7	10.7

TABLE A-88

1961 Plans and Major Reasons for Nonadoption of Five Newer Media

	Percent Citing Reason as Factor in Nonadoption									
	Television Instruction		*Overhead Projector*		*Language Laboratory*		*Programed Text*		*Teaching Machine*	
Reasons for Nonadoption	*Planned*[a]	*Not Planned*	*Planned*[a]	*Not Planned*	*Planned*[a]	*Not Planned*	*Planned*[a]	*Not Planned*	*Planned*[a]	*Not Planned*
Number of Districts	32	112	18	32	51	64	44	117	63	129
Building program takes priority	25.0	11.6	22.2	25.0	27.4	12.5	13.6	7.7	6.4	10.9
Salary raises take priority	18.8	11.6	27.8	37.5	17.7	25.0	6.8	12.0	3.2	14.7
Use requires extensive classroom remodeling	12.5	8.9	5.5	6.2	25.5	25.0	2.3	0.9	1.6	2.3
System too small to justify use	12.5	27.7	11.1	15.6	7.8	28.1	11.4	13.7	9.5	14.0
Too few teachers trained to use technique	18.8	21.4	27.8	37.5	33.3	37.5	45.5	40.2	27.0	35.7
Too difficult to schedule use of equipment	21.9	8.9	5.5	6.2	3.9	3.1	4.5	0.9	3.2	1.6
Technique too expensive for results achieved	31.2	34.8	27.8	18.8	27.4	46.8	20.5	23.1	44.5	28.7
Too few materials to use with medium	21.9	15.2	11.1	3.1	2.0	3.1	18.2	16.2	27.0	14.0
Alternative teaching methods just as good	9.4	12.5	27.8	15.6	9.8	10.9	31.8	27.4	34.9	28.7
Need more evidence of value of technique	21.9	34.8	16.7	18.8	27.4	21.8	63.6	58.1	61.9	53.5
Teachers not convinced of value	9.4	11.6	11.1	21.9	21.6	9.4	31.8	31.6	25.4	25.6
School board not convinced of value	9.4	10.7	11.1	9.4	9.8	9.4	2.3	9.4	4.8	7.8
No reasons given	6.2	8.9	—	—	13.7	6.2	—	6.0	4.8	7.0

[a] The "planned" group are those who had intended to introduce the medium but did not do so.

TABLE A-89

Major Criteria for Evaluating Effectiveness of Audiovisual Media by District Size

		Percent Reporting Use of			
District Size	*Number of Districts*	*Subjective Judgments*[a]	*Observation and Testing*	*Teacher Demand*	*Curriculum Improvement*
Total	238	*65.1*	*50.8*	*26.1*	*16.0*
2	16	*81.2*	*62.5*	*25.0*	*12.5*
3	34	*61.8*	*44.1*	*38.2*	*33.5*
4	56	*58.9*	*41.1*	*26.8*	*16.1*
5	58	*72.4*	*51.7*	*19.0*	*15.5*
6	30	*73.3*	*56.7*	*33.3*	*20.0*
7	27	*55.6*	*59.3*	*22.2*	*14.8*
8	17	*52.9*	*58.8*	*17.6*	—

[a] Includes reactions and evaluations by teachers, students, and/or supervisory staff.

TABLE A-90

Major Criteria for Evaluating Effectiveness of Audiovisual Media by 1964 Position of District-Level Audiovisual Coordinator

		Percent Reporting Use of			
Position of Audiovisual Coordinator	*Number of Districts*	*Subjective Judgments*[a]	*Observation and Testing*	*Teacher Demand*	*Curriculum Improvement*
Total	238	*65.1*	*50.8*	*26.1*	*16.0*
Audiovisual director	45	*62.2*	*42.2*	*35.6*	*22.2*
Other administrative personnel	60	*61.6*	*50.0*	*25.0*	*23.3*
Superintendent	55	*76.2*	*58.2*	*20.0*	*10.9*
School personnel	54	*66.6*	*55.5*	*24.1*	*9.2*
No one designated	24	*50.0*	*41.7*	*29.2*	*12.5*

[a] Includes reactions and evaluations by teachers, students, and/or supervisory staff.

TABLE A-91

Plans To Increase Use of Audiovisual Media, 1961-1964, by District Size[a]

District Size	Number of Districts	Percent Reporting Plans To Increase Use by 1964 for Each Medium								
		16mm Films	Film-strips	Records and Tapes[b]	Opaque Projector	Radio	Tele-vision	Overhead Projector	Language Labora-tory	Programed Materials[b]
Total	238	26.5	33.2	35.7	38.2	12.6	29.8	43.7	55.0	34.0
2	16	56.3	37.5	62.5	68.8	25.0	43.8	68.8	62.5	56.3
3	34	38.2	41.2	38.2	35.3	8.8	23.5	34.1	64.7	44.1
4	56	23.2	30.4	37.5	37.5	5.4	30.4	46.4	60.7	44.6
5	58	20.7	32.2	31.0	31.0	15.5	32.8	39.7	65.5	32.8
6	30	20.0	26.7	33.3	36.7	10.0	20.0	40.0	40.0	16.5
7	27	14.8	25.9	29.6	44.4	18.5	29.6	40.7	37.0	18.5
8	17	35.3	35.3	29.4	35.3	17.6	35.3	35.3	29.4	17.6

[a] "Increase use" is defined as either planning to try a medium or to emphasize or increase the use of a medium. Respondents who checked "continue present use," "no plan to try," or did not answer were considered as desiring to maintain the status quo.

[b] These media were combined in one question on the 1961 questionnaire.

TABLE A-92

Plans To Increase Use of Audiovisual Media, 1964-1966, by District Size

District Size	Number of Districts	Percent Reporting Plans To Increase Use by 1966 for Each Medium									
		16mm Films	Film-strips	Records	Tapes	Opaque Projector	Radio	Tele-vision	Overhead Projector	Language Labora-tory	Pro-gramed Text	Teaching Machine
Total	238	54.6	66.8	57.1	75.2	38.7	17.6	57.1	81.9	51.7	62.6	43.3
2	16	75.0	68.8	43.8	75.0	18.8	12.5	62.5	93.8	68.8	87.5	43.8
3	34	76.5	82.4	73.5	85.3	26.5	11.8	73.5	85.3	52.9	79.4	41.2
4	56	66.1	75.0	62.5	87.5	44.6	21.4	73.2	91.1	66.1	75.0	51.8
5	58	46.6	62.1	53.4	65.5	43.1	19.0	58.6	91.4	62.1	65.5	53.4
6	30	33.3	50.0	46.7	83.3	46.7	20.0	40.0	80.0	40.0	43.3	46.7
7	27	37.0	56.6	59.3	51.9	33.3	14.8	33.3	59.3	25.9	29.6	22.2
8	17	47.1	70.6	46.1	70.6	41.2	17.6	29.4	41.2	11.8	41.2	11.8

TABLE A-93

Type of District and Plans To Increase Use of Audiovisual Materials, 1964-1966 for 232 Districts[a]

	Percent Planning To Increase Use for	
Media	*Elementary Districts*	*Combined Districts*
Number of Districts	32	200
16mm films	*62.5*	*53.2*
Filmstrips	*78.1*	*65.2*
Records	*59.4*	*56.7*
Tapes	*81.2*	*74.1*
Opaque projector	*40.6*	*38.8*
Radio	*12.5*	*18.9*
Television set	*50.0*	*58.2*
Overhead projector	*68.8*	*83.6*
Language laboratory	*18.8*	*56.7*
Programed text	*53.1*	*64.2*
Teaching machine	*34.4*	*44.3*

[a] Six districts with only secondary schools were omitted from this analysis.

TABLE A-94

Number of Schools and Plans To Increase Use of Audiovisual Materials, 1964-1966 for 238 Districts

	Percent Planning To Increase Use When Number of Schools Was			
Media	1-2	3-5	6-11	12-44
Number of Districts	51	61	65	61
16mm films	*49.0*	*32.8*	*64.6*	*70.5*
Filmstrips	*64.7*	*55.7*	*69.2*	*77.0*
Records	*56.9*	*50.8*	*61.5*	*59.0*
Tapes	*66.7*	*73.8*	*80.0*	*78.7*
Opaque projector	*39.2*	*42.6*	*38.5*	*34.4*
Radio	*17.6*	*16.4*	*20.0*	*16.4*
Television set	*33.3*	*57.4*	*66.2*	*67.2*
Overhead projector	*62.7*	*83.6*	*92.3*	*85.2*
Language laboratory	*29.4*	*52.5*	*61.5*	*78.7*
Programed text	*37.3*	*63.9*	*63.1*	*82.0*
Teaching machine	*25.5*	*57.4*	*40.0*	*47.5*

TABLE A-95

1964 Position of District-Level Audiovisual Coordinator and Plans To Increase Use of Audiovisual Materials, 1964-1966 for 214 Districts[a]

	Percent Planning To Increase Use When AV Coordinator Was			
Media	*Audio-visual Director*	*Other Administrative Personnel*	*Superintendent*	*School Personnel*
Number of Districts	45	60	55	54
16mm films	*73.3*	*66.7*	*34.5*	*44.4*
Filmstrips	*82.2*	*75.0*	*52.7*	*59.3*
Records	*64.4*	*63.3*	*43.6*	*57.4*
Tapes	*88.9*	*71.7*	*69.1*	*72.2*
Opaque projector	*22.2*	*36.7*	*36.4*	*53.7*
Radio	*13.3*	*21.7*	*18.2*	*24.1*
Television set	*73.3*	*60.0*	*50.9*	*57.4*
Overhead projector	*97.8*	*81.7*	*69.1*	*81.5*
Language laboratory	*64.4*	*55.0*	*41.8*	*48.1*
Programed text	*82.2*	*73.3*	*54.5*	*50.0*
Teaching machine	*53.3*	*48.3*	*36.4*	*38.9*

[a] Twenty-four districts did not give the position of the district-level coordinator in 1964.

TABLE A-96

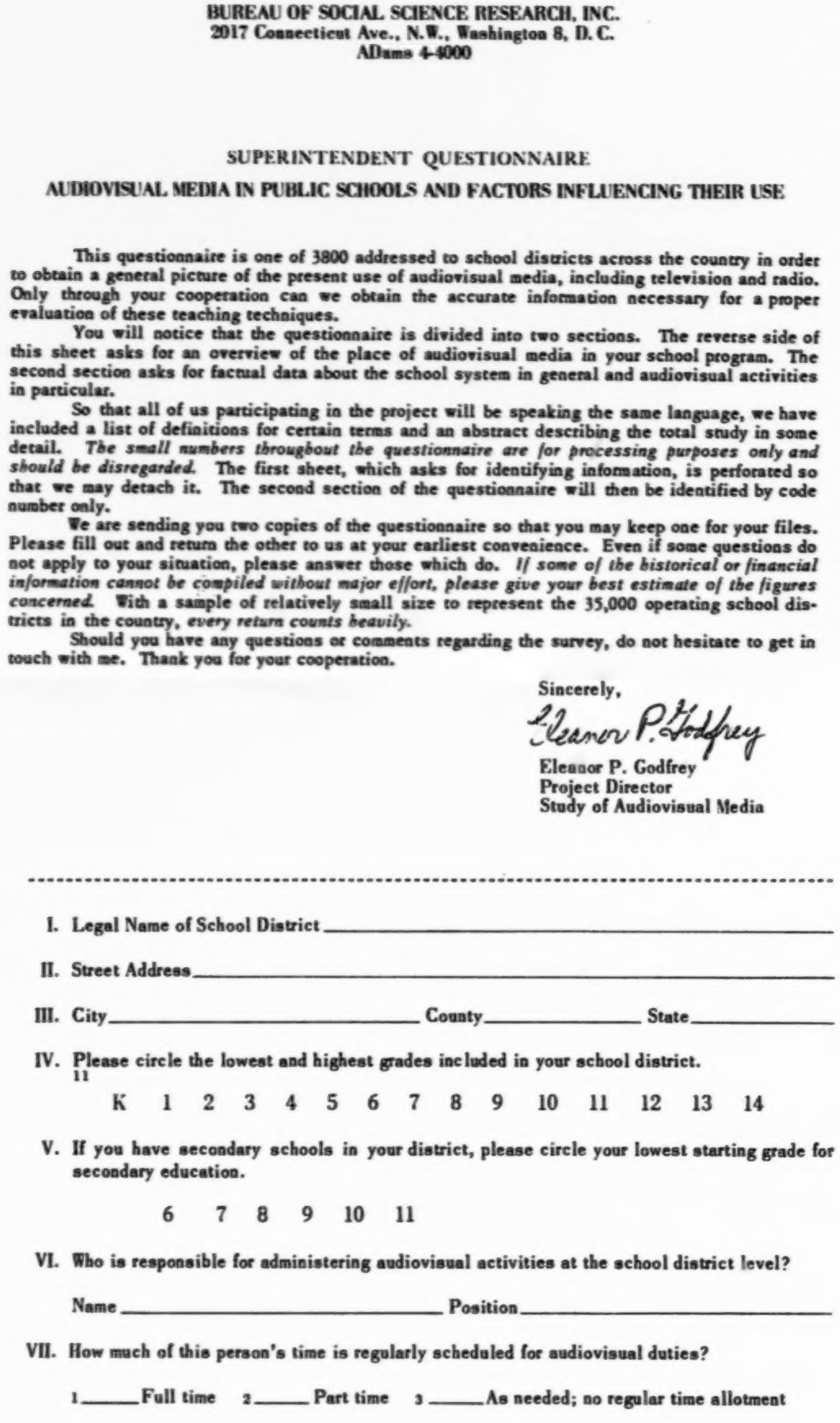
Refined Estimate of Number of Districts That Should Increase Amount of Equipment per School for Three Newer Media (Prediction based on proportion of increase for each planning group for each inventory status level)

Equipment	*Plan To Increase by 1966*	*Prediction Factor*[a]	*Predicted Number*	*No Plan To Increase by 1966*	*Prediction Factor*[a]	*Predicted Number*	*Sum of Predicted Numbers*	*Percent Which Should Increase*
HAD EQUIPMENT IN 1964								
Television set	111	*62.2*	69	51	*55.3*	28	97	*60.0*
Overhead projector	167	*82.7*	138	21	*69.5*	15	153	*81.3*
Language laboratory (secondary schools only)	78	*26.5*	21	40	*20.0*	8	29	*24.5*
NOT HAVE EQUIPMENT IN 1964								
Television set	25	*46.2*	12	51	*24.4*	12	24	*31.5*
Overhead projector	28	*63.5*	18	22	*58.7*	13	31	*26.0*
Language laboratory (secondary schools only)	39	*48.9*	19	49	*19.2*	9	28	*31.8*
COMBINED PREDICTIONS								
Television set							121	*50.8*
Overhead projector							184	*77.3*
Language laboratory (secondary schools only)							57	*27.7*

[a] The prediction factor is shown as a percent.

Appendix B

Questionnaires



BUREAU OF SOCIAL SCIENCE RESEARCH, INC.
2017 Connecticut Ave., N.W., Washington 8, D. C.
ADams 4-4000

SUPERINTENDENT QUESTIONNAIRE

AUDIOVISUAL MEDIA IN PUBLIC SCHOOLS AND FACTORS INFLUENCING THEIR USE

This questionnaire is one of 3800 addressed to school districts across the country in order to obtain a general picture of the present use of audiovisual media, including television and radio. Only through your cooperation can we obtain the accurate information necessary for a proper evaluation of these teaching techniques.

You will notice that the questionnaire is divided into two sections. The reverse side of this sheet asks for an overview of the place of audiovisual media in your school program. The second section asks for factual data about the school system in general and audiovisual activities in particular.

So that all of us participating in the project will be speaking the same language, we have included a list of definitions for certain terms and an abstract describing the total study in some detail. *The small numbers throughout the questionnaire are for processing purposes only and should be disregarded.* The first sheet, which asks for identifying information, is perforated so that we may detach it. The second section of the questionnaire will then be identified by code number only.

We are sending you two copies of the questionnaire so that you may keep one for your files. Please fill out and return the other to us at your earliest convenience. Even if some questions do not apply to your situation, please answer those which do. *If some of the historical or financial information cannot be compiled without major effort, please give your best estimate of the figures concerned.* With a sample of relatively small size to represent the 35,000 operating school districts in the country, *every return counts heavily.*

Should you have any questions or comments regarding the survey, do not hesitate to get in touch with me. Thank you for your cooperation.

Sincerely,

Eleanor P. Godfrey

Eleanor P. Godfrey
Project Director
Study of Audiovisual Media

I. Legal Name of School District ______________________________

II. Street Address ______________________________

III. City ______________ County ______________ State ______________

IV. Please circle the lowest and highest grades included in your school district.
11

K 1 2 3 4 5 6 7 8 9 10 11 12 13 14

V. If you have secondary schools in your district, please circle your lowest starting grade for secondary education.

6 7 8 9 10 11

VI. Who is responsible for administering audiovisual activities at the school district level?

Name ______________________ Position ______________________

VII. How much of this person's time is regularly scheduled for audiovisual duties?

1 ______ Full time 2 ______ Part time 3 ______ As needed; no regular time allotment

SUPERINTENDENT'S OVERVIEW OF AUDIOVISUAL MEDIA

VIII. In general, do you think audiovisual materials (including radio and television programs) are best used as an integral part of a course? For supplementary information? Or to highlight a special unit? *Please comment.*

IX. What major problems do you have in using audiovisual materials in your teaching program?

A.

B.

C.

X. In the next two years, what plans do you have for use of the following media? Please check the appropriate column for each of the media listed.

MEDIA	1 PLAN TO TRY	2 CONTINUE PRESENT USE	3 EMPHASIZE USE	4 DE-EMPHASIZE USE	5 NO PLAN TO TRY
Broadcast television					
Closed circuit television					
Radio					
Language laboratories					
Teaching machines					
16 mm sound films					
8 mm sound films					
Filmstrips					
Disc and tape recordings					
Overhead and opaque projectors					
Other *(please specify)*					

Name ______________________________

Position ______________________________

Date ______________________________

☐ ☐☐ ☐☐☐ ☐☐☐ ☐ ☐

AUDIOVISUAL MEDIA IN PUBLIC SCHOOLS AND FACTORS INFLUENCING THEIR USE

ENROLLMENT AND EXPENDITURES

1. Please give the number of schools and full-time teachers as of your *first* regular report date for the *fall* terms of 1960 and 1955.

TYPE OF SCHOOL	NUMBER OF SCHOOLS		NUMBER OF FULL-TIME TEACHERS	
	1960	1955	1960	1955
Elementary	11		17	
Secondary	27		33	
TOTAL NUMBER	43		49	

2. How many pupils were enrolled as of your *first* regular report date for the *fall* terms of 1960 and 1955?

3. What was the average daily attendance for 1959-60 *and* 1955-56?

TYPE OF SCHOOL	PUPIL ENROLLMENT		AVERAGE DAILY ATTENDANCE	
	1960	1955	1959-60	1955-56
Elementary 11				
Secondary 31				
TOTAL NUMBER 51				

4. What was the *total annual expenditure* (including current expenses, capital outlay, and debt service) for your district in 1959-60? In 1955-56?

1959-60 $__________ 11 1955-56 $__________ 17

5. What were the *total current expenses* (excluding capital outlay and debt service) for your district in 1959-60? In 1955-56?

1959-60 $__________ 23 1955-56 $__________ 29

6. What was the total expenditure for *instructional materials* (including audiovisual equipment and materials) for your district in 1959-60? In 1955-56?

1959-60 $__________ 35 1955-56 $__________ 41

7. What is your *total annual budget* for 1960-61 (including current expenses, capital outlay, and debt service)?

1960-61 $__________ 47

8. What is you *current expense budget* for 1960-61 (excluding capital outlay and debt service)?

1960-61 $__________ 53

9. What is your *instructional materials budget* for 1960-61 (including audiovisual equipment and materials)?

1960-61 $__________ 59

AUDIOVISUAL EXPENDITURES AND ADMINISTRATION

10. Has your district received National Defense Education Act (Title III) funds for projects in science, mathematics, and modern foreign languages?
11

1____Yes 2____No

(IF NO, PLEASE GO TO QUESTION 14)

11. Please list the major items of equipment and materials acquired with the aid of NDEA funds.

____

____

____

12. Please give the total amount of Title III NDEA project money (local and state matching funds plus Federal funds) spent by your school district in each of the last three years. Use "O" where no NDEA funds were spent.

1960-61 $__________ 24 1959-60 $__________ 30 1958-59 $__________ 36

13. Please give the amount of Title III NDEA project money (local and state matching funds plus Federal funds) spent *for audiovisual equipment and materials* in each of the last three years. Use "O" where no NDEA funds were spent.

1960-61 $__________ 42 1959-60 $__________ 48 1958-59 $__________ 54

14. If your district has received no NDEA funds during any of the past three years, please check the most accurate reason. If no listed answer applies, use "Other" and supply appropriate details.

REASON	YEAR		
	1960-61	1959-60	1958-59
1 Application procedures not developed in time			
2 Applied, but did not receive funds			
3 More pressing needs; no matching funds available			
4 District policy against this use of Federal funds			
Other			
	60	61	62

15. Other than money spent for NDEA projects reported in *Question 13*, how much did you spend for audiovisual equipment, materials, building adaptation, etc., in each of the last three years? If exact figures are not available, give estimated amount, preceded by "E". Use "O" where no funds were spent.

ITEM OF AUDIOVISUAL EXPENDITURE	AMOUNT OF EXPENDITURE		
	1960-61	1[illegible]9-60	1958-59
Equipment; including equipment for new buildings 11	$	$	$
Materials; purchased and rented 29	$	$	$
Maintenance of equipment and materials 47	$	$	$
Building adaptation; dark shades, etc. 11	$	$	$
Transportation of equipment and materials 26	$	$	$
Other *(please specify)* 41	$	$	$
TOTAL EXPENDITURE 56	$	$	$

☐ ☐☐ ☐☐☐ ☐☐ ☐ ☐

16. How do you budget your annual school district expenditures for audiovisual equipment, materials, etc.? Please check the most accurate description. If no listed answer applies, use "Other" and supply appropriate details.
11

1 _____ No fixed budget item; spend as need arises and funds are available

2 _____ Budget for specific items; projectors, film purchases, etc.

3 _____ Budget a certain percentage of the instructional materials budget;

_____________ % of instructional materials budget
12

4 _____ Budget a fixed amount per pupil; $ _____________ per pupil
14

_____ Other ____

____

____

17. How are audiovisual activities coordinated for your school district? Please check the most accurate description. If no listed answer applies, use "Other" and supply appropriate details.
16

1 _____ No central coordination (each school administers its own program)

2 _____ Coordination through superintendent's office (no formal department)

3 _____ Coordination through audiovisual department

4 _____ Coordination through instructional materials center (audiovisual combined with library)

5 _____ Coordination through communications center (audiovisual combined with radio and/or television)

_____ Other ____

____

____

18. Who coordinates audiovisual activities in each of the schools in your district? Please give the *number* of schools in which the coordinator holds any of the following positions.

CHIEF POSITION TITLE OF COORDINATOR	NUMBER OF SCHOOLS	
	ELEMENTARY	SECONDARY
Principal or assistant principal 17		
School librarian 23		
Classroom teacher 29		
School secretary 35		
Audiovisual coordinator *(only)* 41		
Schools with *no building coordinator* 47		
Other *(please specify)* 53		
TOTAL NUMBER OF SCHOOLS 59		

AUDIOVISUAL EQUIPMENT, MATERIALS, AND FACILITIES

19. IN COLUMN A: Please give the *total number of units* of the following audiovisual equipment and materials *recorded on a central inventory* as owned, held on long-term loan, or leased-to-own by your school system.

IN COLUMN B: Please indicate how these units are distributed among elementary and secondary schools. (Draw a line through the school distribution columns if: you do not assign units to individual schools; you do not keep separate figures for elementary and secondary schools; or you have only one school in your district.)

IN COLUMN C: Please estimate how many units of equipment and materials are used by individual schools *in addition to those listed on your central inventory.* (If you have no such equipment, draw a line through *Column C.)*

IN COLUMN D: Please estimate the number of additional units of equipment and materials *needed to serve your present teaching program and enrollment.*

TYPE OF EQUIPMENT AND MATERIAL	ON CENTRAL INVENTORY			NOT ON CENTRAL INVENTORY	NEEDED	
	A. TOTAL NUMBER 1	B. SCHOOL DISTRIBUTION		C. ESTIMATED NUMBER 4	D. ESTIMATED NUMBER 5	
		2 ELEM.	3 SECOND.			
16 mm sound projectors						10
Comb. slide-filmstrip projectors						11
Record players *(all speeds)*						12
Tape recorders						13
Radio receivers						14
Television receivers						15
Portable public address systems						16
Central sound systems						17
Overhead projectors						18
Opaque projectors						19
Filmstrip *(only)* projectors						20
2 x 2 slide *(only)* projectors						21
Language laboratory installations						22
8 mm sound projectors						23
16 mm sound films: titles						24
Total number of prints						25
Filmstrips: titles						26
Total number of prints						27
Disc recordings *(all copies)*						28
Tape recordings *(all copies)*						29
2 x 2 slides *(all copies)*						30
Other *(please specify)*						31

☐ ☐☐ ☐☐☐ ☐☐ ☐ ☐

20. Do you have equipment and facilities (either in a school district center or in individual schools) for *producing* your own audiovisual and communications materials?
11

1______Yes 2______No

[IF YES:]

Please check *all* that apply.

1 _____ Motion picture cameras
2 _____ 35 mm still cameras
3 _____ Darkroom facilities
4 _____ Radio broadcasting facilities
5 _____ Transparency-making facilities
6 _____ TV broadcasting facilities
7 _____ Sound recording facilities
8 _____ Display-making facilities
9 _____ Other *(please specify)* ______________________________
____
____

FILMS, RADIO, AND TELEVISION

21. Approximately what *percent* of the *total number* of films used in your schools was obtained from each of the following sources? (Include short-term loans.)
13

__________% State Department of Education
__________% Cooperative, regional, or county film libraries
__________% City or county public libraries
__________% University film libraries
__________% Business or trade associations
__________% Non-profit or religious organizations
__________% U. S. Government agencies
__________% Your own school system
__________% Other *(please specify)* ______________________________
____
____

100 %

22. Do you use filmed courses (e.g., physics, chemistry, and biology) in your teaching program?
31

1______Yes 2______No

23. Do you plan to use filmed courses within the next two years?

1______Yes 2______No

24. Do you use television and/or radio broadcasts *during regular school hours?*
33

1 _______ Yes 2 _______ No

[IF YES:]
Please indicate the type of use.

TYPE OF USE	MEDIA	
	TV	RADIO
1 Broadcasts of national interest; e.g., Inauguration		
2 Broadcasts of local interest; e.g., basketball tournament		
3 Complete courses; e.g., science, language		
4 Regular part of course; e.g., laboratory demonstrations		
5 Occasional programs; e.g., guidance, music		
Other *(please specify)*		
	34	35

25. Have you installed closed-circuit television equipment either on a system-wide basis or for use in individual schools?

System-wide 1 _______ Yes 2 _______ No

Individual schools 1 _______ Yes 2 _______ No

26. Do you use television and/or radio programs for in-service teacher training?

Television 1 _______ Yes 2 _______ No

Radio 1 _______ Yes 2 _______ No

Please add any comments you would like to make about your audiovisual program.

STUDY OF AUDIOVISUAL MEDIA
Sponsored by U. S. Office of Education
PRINCIPAL QUESTIONNAIRE

1. Please return this questionnaire at your earliest convenience. *It should take about 20 minutes to complete.*
2. Disregard the small numbers next to the answer boxes. These are simply to help in coding and tabulating.
3. *All replies will be held in confidence. No individual or school will be identified in the report of this study.*

BACKGROUND INFORMATION

This first section asks for some background information about your school, your community, and your teaching career. If some of our categories do not quite fit your situation, please add whatever comments are necessary to describe it.

1. Legal Name of School ____________________

2. School Street or Post Office Address ____________________

3. City ____________________ County ____________________ State __________

4. In what year was your school built? __________
11

5. Please circle the lowest and highest grades included in your school.

K 1 2 3 4 5 6 7 8 9 10 11 12 13 14

6. At the time of your first regular report date for the fall term (1961), how many full-time teachers and how many students did you have in your school?

__________ Full-time teachers
18

__________ Students enrolled
21

7. Occupation of students' families: What proportion of the fathers of your students are in each of the following occupational groups? *Please estimate.*
25

______ % Professional, managerial

______ % Semi-professional, farm owner

______ % Clerical, sales

______ % Skilled labor, service occupation, tenant farmer

______ % Unskilled labor, farm laborer

100 %

8. Including this year, how many years have you been principal *of this school?*
35

____(years)

9. Including this year, how many years in all have you been a principal?

____(years)

10. Do you now teach any subjects or grades in addition to your duties as principal?
39

1 ☐ Yes 2 ☐ No

11. IF YES Subject(s) taught? ____________________

Grade level(s) taught? ____________________

12. Please indicate what subject(s) *and* grade(s) levels you *have taught* in the past.

SUBJECT	GRADE LEVEL
____________________ 49	____________________ 51
____________________	____________________
____________________	____________________
____________________	____________________

13. Please check the highest degree you hold.
65

1 ☐ A. A. 4 ☐ Ph. D., Ed. D.

2 ☐ B. A., B. S., B. Ed. 9 ☐ Other ____________

3 ☐ M. A., M. S., M. Ed.

14. Major field for highest degree? ____________ 15. Year received? ________

16. Sex: 1 ☐ Female 2 ☐ Male 17. Year of birth? ________

IF YOU ARE AN ELEMENTARY SCHOOL PRINCIPAL, PLEASE ANSWER QUESTION 18. IF YOU ARE A JUNIOR OR SENIOR HIGH SCHOOL PRINCIPAL, PLEASE ANSWER QUESTIONS 19 AND 20.

18. FOR ELEMENTARY PRINCIPALS How many *full-time* teachers do you have in each of the grades in your school? *Teachers whose time is divided between two or more grades should be shown as fractions opposite the grades they teach.*

NUMBER OF TEACHERS	GRADE	NUMBER OF TEACHERS	GRADE
________ 11	Kindergarten	________ 23	6th Grade
________	1st Grade	________	7th Grade
________	2nd Grade	________	8th Grade
________	3rd Grade	________	Special education
________	4th Grade	________	Other
________	5th Grade		

- 3 -

19. **FOR JUNIOR AND SENIOR HIGH SCHOOL PRINCIPALS** How many *full-time* teachers do you have who teach the following subjects? *Teachers whose time is divided between two or more programs should be shown as fractions opposite the subjects they teach.*

NUMBER OF TEACHERS	SUBJECT	NUMBER OF TEACHERS	SUBJECT
________ 33	Science	________ 45	Art
________	Mathematics	________	Industrial arts
________	Foreign languages	________	Home economics
________	Social studies	________	Commercial education
________	English, speech	________	Health, physical education
________	Music	________	Other

20. **FOR JUNIOR AND SENIOR HIGH SCHOOL PRINCIPALS** What percent of your students took each of the following types of programs during the fall term (1961)?
57

_____ % College preparatory

_____ % Vocational, technical

_____ % Commercial

_____ % General

100 %

☐ Our junior high school curriculum is not divided into these programs.
65

ORGANIZATION OF AUDIOVISUAL PROGRAM

21. About how long has there been any type of coordination of audiovisual activities in your school?
11

0 ☐ Never have had this type of coordination

1 ☐ 0-4 years

2 ☐ 5-9 years

3 ☐ 10-14 years

4 ☐ 15 years and over

5 ☐ Ever since school has been in operation

22. Do you have a faculty audiovisual committee in your school?

1 ☐ Yes 2 ☐ No

23. IF YES What does this faculty committee do? *Please check all that apply.*

1 ☐ Helps decide what new equipment should be bought

2 ☐ Helps decide what new audiovisual materials should be bought

3 ☐ Helps train other teachers how to teach with audiovisual aids

9 ☐ Other *(specify)*____

____

x ☐ Exists, but serves little purpose

24. How many of each of the following types of audiovisual equipment and materials are kept in your school building?
PLEASE GIVE APPROXIMATE NUMBER FOR EACH ITEM. IF NONE, USE 0.

_____ Record players
18
_____ Radios
_____ Television sets
_____ 16 mm sound projectors
_____ Slide-filmstrip projectors
_____ Tape recorders

_____ Overhead projectors
30
_____ Opaque projectors
_____ Filmstrips (strip films)
34
_____ Records
_____ Tape recordings
_____ 2 x 2 slides

25. From what sources does your school obtain *sound films? Please estimate the percent films you use which come from each of the following sources.*
43
_____ % Our own school library
_____ % Our school system library
_____ % Cooperative, regional, or county film libraries
_____ % State Department of Education
_____ % University film libraries
_____ % City or county public libraries
_____ % Business or trade organizations (free films)
_____ % Commercial rental agencies
_____ % Non-profit or religious organizations
_____ % Other *(specify)* ______________________________
100 %

☐ Do not use sound films

26. Does your school have any equipment or facilities for *producing* audiovisual materials? *Please check all that apply.*
11
1 ☐ Motion picture cameras
2 ☐ 35 mm still cameras
3 ☐ Darkroom facilities
4 ☐ Transparency-making facilities
5 ☐ Display-making facilities
6 ☐ Tape recording facilities
9 ☐ Other ____________________
0 ☐ Have no production facilities

27. Does your school have any type of language laboratory installation?
18
1 ☐ Yes 2 ☐ No

28. IF YES What kind of facilities do you have? ______________________________

____

____

29. In the past five years has the PTA or other parent group contributed financially toward the purchase of any audiovisual aids for your school?
21

1 ☐ Yes 2 ☐ No

30. IF YES Please check the items acquired with this aid.

1 ☐ Record player
22
2 ☐ Radio
3 ☐ Television set
4 ☐ 16 mm sound projector
5 ☐ Slide-filmstrip projector
6 ☐ Tape recorder
7 ☐ Overhead projector

8 ☐ Opaque projector
29
9 ☐ Filmstrips (strip films)
10 ☐ Records
11 ☐ Tape recordings, tapes
12 ☐ 2 x 2 slides
13 ☐ Other ______________________
____

31. Do any of the following hinder use of classrooms for the projection of visual material? *Please check all that apply.*
35

1 ☐ Lack of suitable electric outlets
2 ☐ Inadequate ventilation during darkening
3 ☐ Glass block walls, clerestory windows, sky lights
4 ☐ Lack of darkening drapes or shades
9 ☐ Other *(specify)* ______________________
☐ Have no problems in projecting visual materials in the classroom

32. Do any of the following hinder the use of classrooms for records, tapes, radio, or television? *Please check all that apply.*
41

1 ☐ Poor accoustics
2 ☐ Interference from noise from other rooms and/or halls
3 ☐ Poor radio reception in our area
4 ☐ Poor television reception in our area
5 ☐ Interference from other electrical equipment in the building
9 ☐ Other *(specify)* ______________________
☐ Have no problems in using these materials in the classroom

33. Are student assistants used in your audiovisual program?
48

1 ☐ Yes 2 ☐ No

34. IF YES What duties are performed by students? *Please check all that apply.*

1 ☐ Operation of equipment

2 ☐ Delivery of equipment and materials to teachers

3 ☐ Pick-up and return of equipment and materials to audiovisual office

4 ☐ Minor service and repair of equipment

5 ☐ Clerical assistance to audiovisual coordinator

9 ☐ Other *(specify)* ____________________

____

35. Below is a list of services which an audiovisual coordinator may perform. Which THREE are most important for your school? *PLEASE CHECK ONLY THREE.*
55

1 ☐ Suggesting appropriate audiovisual material for classroom use

2 ☐ Teaching teachers to operate equipment

3 ☐ Suggesting new or different uses of available materials

4 ☐ Keeping teachers up-to-date on new audiovisual materials

5 ☐ Ordering materials and scheduling equipment

6 ☐ Repairing and maintaining equipment

7 ☐ Classifying and storing materials

8 ☐ Preparing specialized audiovisual materials

9 ☐ Other *(specify)* ____________________

____

36. What person in your school usually performs the tasks you checked in Question 35?

Name ____________________

Major job title ____________________

PLEASE ASK THE PERSON YOU NAMED IN QUESTION 36 TO FILL OUT THE SHORT AUDIOVISUAL COORDINATOR QUESTIONNAIRE.

4

OVERVIEW OF AUDIOVISUAL MEDIA

37. Below is a list of difficulties educators have experienced in using audiovisual aids. Please indicate which are important problems in your school.
PLEASE CHECK EITHER THE YES ☐ OR NO ☐ FOR EACH STATEMENT
11

YES NO
1 ☐ ☐ Teachers do not have enough time to preview or prepare materials adequately.
2 ☐ ☐ Teachers find it difficult to integrate available audiovisual materials into their lesson plans.
3 ☐ ☐ Teachers don't have enough information to know what materials are most appropriate for their grade level.
4 ☐ ☐ Many classrooms are not properly set up to use audiovisual aids.
5 ☐ ☐ Teachers do not have enough time to do all the basic teaching they should, let alone use audiovisual aids.
6 ☐ ☐ Much of the equipment is too difficult to operate.
7 ☐ ☐ Much of the equipment is in poor repair or obsolete.
8 ☐ ☐ Some subject areas have few good audiovisual materials.
9 ☐ ☐ There is too much "red tape" involved in ordering materials and scheduling equipment.
10 ☐ ☐ Students look on audiovisual lessons as "entertainment" and do not "study" material presented.
11 ☐ ☐ Audiovisual aids are too expensive for the results achieved.
12 ☐ ☐ Materials or equipment frequently cannot be made available when needed.
13 ☐ Other *(Specify)*____
____
14 ☐ There are no difficulties in using audiovisual aids in our school.

38. Audiovisual media may serve a number of purposes. How often are they used for each of the following purposes in your school? *PLEASE CHECK ONE ANSWER FOR EACH USE*
25

USE	RELATIVE FREQUENCY			
	VERY OFTEN	SOMETIMES	SELDOM	NEVER
To motivate students to learn				
To enrich material given in text or class discussion				
To review material given in text or class discussion				
To present new material (for direct teaching)				
To illustrate a principle				
To provide general background for a unit				
For cultural activity				

39. What plans do you have for each of the following audiovisual aids in your school during the next two years? *PLEASE CHECK ONE ANSWER FOR EACH OF THE AIDS LISTED.*
32

MEDIA	PLAN TO TRY	CONTINUE PRESENT USE	EMPHASIZE USE	DE-EMPHASIZE USE	NO PLAN TO TRY
Sound films					
Filmstrips (strip films)					
Overhead projectors					
Opaque projectors					
Tape recordings (language arts, foreign language)					
Tape recordings (other than language)					
2 x 2 slides					
Records					
Radio					
Broadcast television					
Closed circuit television					
Teaching machines					

40. In general, do you think audiovisual materials are best used as an integral part of a course? For supplementary information? Or to highlight a special unit?
44

1 ☐ Integral part of course

2 ☐ For supplementary information

3 ☐ To highlight a special unit

Please add any comments you would like to make about the use of audiovisual aids in your school.

Signature ______________________________

PLEASE ATTACH A LIST OR DIRECTORY OF YOUR TEACHING PERSONNEL so that we may record it when your teachers return the questionnaire and exclude them from follow-up mailings. The survey is completely confidential. Your school will not be associated with the findings in any way.

☐

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STUDY OF AUDIOVISUAL MEDIA
Sponsored by U. S. Office of Education
TEACHER QUESTIONNAIRE

1. Please return this questionnaire at your earliest convenience. *It should take about 20 minutes to complete.*
2. Disregard the small numbers next to the answer boxes. These are simply to help in coding and tabulating.
3. *All replies will be held in confidence. No individual or school will be identified in the report of this study.*

BACKGROUND INFORMATION

This first section asks for some background information about your teaching career. If our categories do not quite fit your situation, please add whatever comments are necessary to describe it.

1. Name of school where you teach ____________________

2. School Street or Post Office Address ____________________

3. City ____________________ County ____________ State __________

4. Please circle the grade level(s) you teach.
11
K 1 2 3 4 5 6 7 8 9 10 11 12 13 14

5. FOR JUNIOR AND SENIOR HIGH SCHOOL TEACHERS What subjects(s) do you teach? If more than one, please give your *major assignment first.*
____
____

6. Including this year, how many years have you been teaching in this school?
24
_____(years)

7. Including this year, how many years have you been teaching in all?
_____(years)

8. Please check the highest degree you hold.
1 ☐ Teaching certificate
2 ☐ A. A.
3 ☐ B. A., B. S., B. Ed.
4 ☐ M. A., M. S., M. Ed.
5 ☐ Ph. D., Ed. D.
9 ☐ Other ____________________

9. Major field for highest degree? ____________________ 10. Year received? __________

11. Sex: 1 ☐ Female 2 ☐ Male 12. Year of birth? __________
34

39. What plans do you have for each of the following audiovisual aids in your school during the next two years? *PLEASE CHECK ONE ANSWER FOR EACH OF THE AIDS LISTED.*
32

MEDIA	PLAN TO TRY	CONTINUE PRESENT USE	EMPHASIZE USE	DE-EMPHASIZE USE	NO PLAN TO TRY
Sound films					
Filmstrips (strip films)					
Overhead projectors					
Opaque projectors					
Tape recordings (language arts, foreign language)					
Tape recordings (other than language)					
2 x 2 slides					
Records					
Radio					
Broadcast television					
Closed circuit television					
Teaching machines					

40. In general, do you think audiovisual materials are best used as an integral part of a course? For supplementary information? Or to highlight a special unit?
44

1 ☐ Integral part of course
2 ☐ For supplementary information
3 ☐ To highlight a special unit

Please add any comments you would like to make about the use of audiovisual aids in your school.

Signature ______________________________

PLEASE ATTACH A LIST OR DIRECTORY OF YOUR TEACHING PERSONNEL so that we may record it when your teachers return the questionnaire and exclude them from follow-up mailings. The survey is completely confidential. Your school will not be associated with the findings in any way.

SOURCES OF INFORMATION AND TRAINING

13. Does you school district prepare information on audiovisual materials available for use with your classes?
36

1 ☐ **Yes** 2 ☐ **No** 3 ☐ **Don't know**

14. IF YES Please indicate how this information is made available to teachers. ***Please check all that apply***

1 ☐ **Each teacher has his own list or catalogue**

2 ☐ **Each department receives this information**

3 ☐ **The school audiovisual coordinator has this information**

4 ☐ **This information is available in the school library**

9 ☐ **Other** ***(specify)*** ______________________________

15. IF YES Is this information sufficient for your needs or not as complete as you would like?

1 ☐ **Sufficient** 2 ☐ **Incomplete**

16. Have you had any special training or course work in the use of audiovisual aids?
39

1 ☐ **Yes** 2 ☐ **No**

17. IF YES What type of audiovisual training have you had? ***Please check all that apply***

1 ☐ **College or university course**
2 ☐ **Summer workshop**
3 ☐ **Inservice training during school year**
9 ☐ **Other** ______________________________

18. Do you have an opportunity to suggest purchase or rental of audiovisual equipment and/or materials used in your school?

1 ☐ **Yes** 2 ☐ **Yes, but haven't suggested any** 3 ☐ **No**

19. IF YES How often are the items you suggest purchased or rented?
42

1 ☐ **Almost always**
2 ☐ **Frequently**
3 ☐ **Occasionally**
4 ☐ **Rarely**
5 ☐ **Never**
9 ☐ **Other** ______________________________

20. **Which one of the following sources has given you the most valuable information about audiovisual materials and equipment suitable for your classes?** ***PLEASE CHECK ONLY ONE ANSWER***

43

1 ☐ **Catalogue or bulletin issued by my school or school district**

2 ☐ **Information supplied by distributors or manufacturers of audiovisual aids**

3 ☐ **Training sessions or workshops given by my school or school district**

4 ☐ **An audiovisual course or summer workshop at a university or college**

5 ☐ **Fellow teachers**

6 ☐ **Professional journals**

9 ☐ **Other** ***(specify)*** ____________________

0 ☐ **None**

21. **Which one of the following types of assistance do you need *most* to use audiovisual aids effectively?** ***PLEASE CHECK ONLY ONE ANSWER***

1 ☐ **Suggestions of appropriate audiovisual materials for my classes**

2 ☐ **Instruction or help in operating the equipment**

3 ☐ **Suggestions on the best use of available materials**

4 ☐ **Help in keeping up-to-date on new audiovisual materials**

5 ☐ **Help in ordering materials and procuring equipment**

6 ☐ **Repair and maintenance of equipment**

7 ☐ **Classifying and storing materials**

8 ☐ **Preparation of specialized audiovisual materials**

9 ☐ **Other** ***(specify)*** ____________________

____

0 ☐ **None**

22. **What person in your school usually gives you the type of assistance that you checked in Question 21?**

Name ____________________

Major job title ____________________

☐ **No one**

23. **Is the person you named in Question 22 assigned to coordinating audiovisual activities in your school?**

47

1 ☐ **Yes** 2 ☐ **No** 3 ☐ **Don't know**

USE OF AUDIOVISUAL AIDS

24. During the fall semester (1961), about how many times did you use any of the following with your classes during regular school hours? *PLEASE GIVE APPROXIMATE NUMBER FOR FOR EACH AID, IF NONE, USE 0*
11

NUMBER OF TIMES USED	AUDIOVISUAL AID	NUMBER OF TIMES USED	AUDIOVISUAL AID
________	Filmstrips (strip films)	________	2 x 2 slides
________	Sound films	________	Radio programs
________	Records	________	Television programs
________	Tape recordings (language arts, foreign language)	________	Overhead projector
________	Tape recordings (other than language)	________	Opaque projector

☐ Did not use any of these audiovisual aids
31

25. Do you bring into class any of *your own* slides, records, home movies or other audiovisual aids?
32

1 ☐ Yes   2 ☐ No

26. IF YES Which ones have you brought into class?

1 ☐ Slides
2 ☐ Records
3 ☐ Home movies
9 ☐ Other ________________________

27. Do you *prepare* any slides, transparencies, tapes or other audiovisual materials for use in your classes?

1 ☐ Yes   2 ☐ No

28. IF YES Which materials have you made?

1 ☐ Slides
2 ☐ Transparencies
3 ☐ Tapes
9 ☐ Other ________________________

29. How familiar are you with the operation of each of the following pieces of equipment? *PLEASE CHECK ONE ANSWER FOR EACH PIECE OF EQUIPMENT LISTED*

EQUIPMENT	HAVE NEVER OPERATED	FIND HARD TO OPERATE	FIND EASY TO OPERATE	CAN TEACH SOMEONE ELSE TO OPERATE
Slide filmstrip projector				
Film projector				
Tape recorder				
Overhead projector				
Opaque projector				

In the next six questions, please imagine yourself in *EACH* of the teaching situations given, even if you have never taught that particular unit. Assume that each of the auxiliary teaching resources listed is equally available to you and rank them from 1-6 in order of your preference. *PLEASE RANK EVERY RESOURCE FOR EVERY QUESTION USING 1 FOR YOUR MOST PREFERRED CHOICE*

30. For a *unit on rockets*, you could use any of the resources or teaching techniques listed below. How would you rank these with respect to their value for the rocket unit? *PLEASE GIVE EACH RESOURCE A NUMERICAL RANK FROM 1-6*

11

_____ Displays, posters

_____ Demonstrations

_____ Field trips

_____ Bring in individuals to speak

_____ Reference works (books, magazines, periodicals)

_____ Audiovisual aids (films, records, television, etc.)

31. For a *unit on local trees*, you could use any of the resources or teaching techniques listed below. How would you rank these with respect to their value for the local tree unit? *PLEASE GIVE EACH RESOURCE A NUMERICAL RANK FROM 1-6*

17

_____ Displays, posters

_____ Demonstrations

_____ Field trips

_____ Bring in individuals to speak

_____ Reference works (books, magazines, periodicals)

_____ Audiovisual aids (films, records, television, etc.)

32. For a *unit on local government*, you could use any of the resources or teaching techniques listed below. How would you rank these with respect to their value for the local government unit? *PLEASE GIVE EACH RESOURCE A NUMERIAL RANK FROM 1-6*

23

_____ Displays, posters

_____ Demonstrations

_____ Field trips

_____ Bring in individuals to speak

_____ Reference works (books, magazines, periodicals)

_____ Audiovisual aids (films, records, television, etc.)

– 6 –

33. You want to give your class *an understanding of American holidays.* You could use any of the resources or teaching techniques listed below. How would you rank these with respect to their value for teaching students about holidays? *PLEASE GIVE EACH RESOURCE A NUMERICAL RANK FROM 1-6*
29

_____ Displays, posters

_____ Demonstrations

_____ Field trips

_____ Bring in individuals to speak

_____ Reference works (books, magazines, periodicals)

_____ Audiovisual aids (films, records, television, etc.)

34. For a *unit on the people and animals of Africa,* you could use any of the resources or teaching techniques listed below. How would you rank these with respect to their value for a unit on African people and animals? *PLEASE GIVE EACH RESOURCE A NUMERICAL RANK FROM 1-6*
36

_____ Displays, posters

_____ Demonstrations

_____ Field trips

_____ Bring in individuals to speak

_____ Reference works (books, magazines, periodicals)

_____ Audiovisual aids (films, records, television, etc.)

35. For a *unit on Colonial American literature,* you could use any of the resources or teaching techniques listed below. How would you rank these with respect to their value for a unit on Colonial American literature? *PLEASE GIVE EACH RESOURCE A NUMERICAL RANK FROM 1-6*
42

_____ Displays, posters

_____ Demonstrations

_____ Field trips

_____ Bring in individuals to speak

_____ Reference works (books, magazines, periodicals)

_____ Audiovisual aids (films, records, television, etc.)

OVERVIEW OF AUDIOVISUAL MEDIA

36. Below is a list of difficulties teachers have experienced in using audiovisual aids. Please indicate which are important problems for you.
PLEASE CHECK EITHER THE YES ☐ OR NO ☐ FOR EACH STATEMENT
11

YES NO

1 ☐ ☐ I do not have enough time to preview or prepare materials adequately.
2 ☐ ☐ It is difficult to integrate audiovisual materials into my lesson plans.
3 ☐ ☐ I do not have enough information to know what materials are most appropriate for my grade level.
4 ☐ ☐ My classroom is not properly set up to use audiovisual aids.
5 ☐ ☐ I do not have anough time to do all the basic teaching I should, let alone use audiovisual aids.
6 ☐ ☐ Much of the equipment is too difficult to operate.
7 ☐ ☐ Much of the equipment is in poor repair or obsolete.
8 ☐ ☐ There are few good audiovisual materials in my subject area.
9 ☐ ☐ There is too much "red tape" involved in ordering materials and scheduling equipment.
10 ☐ ☐ Students look on audiovisual lessons as "entertainment" and do not "study" material presented.
11 ☐ ☐ Audiovisual aids are too expensive for the results achieved.
12 ☐ ☐ Materials or equipment frequently are not available when I need them.
13 ☐ Other *(specify)* ____

____

14 ☐ I have no difficulties in using audiovisual aids.

37. Audiovisual media may serve a number of purposes. How often do you put them to the following uses? *PLEASE CHECK ONE ANSWER FOR EACH USE*
25

USE	RELATIVE FREQUENCY			
	VERY OFTEN	SOMETIMES	SELDOM	NEVER
To motivate students to learn				
To enrich material given in text or class discussion				
To review material given in text or class discussion				
To present new material (for direct teaching)				
To illustrate a principle				
To provide general background for a unit				
For cultural activity				

38. What plans do you have for using each of the following audiovisual aids *in your classes* this semester (spring term 1962)? *PLEASE CHECK ONE ANSWER FOR EACH AID LISTED*
32

MEDIA	PLAN TO TRY	CONTINUE PRESENT USE	EMPHASIZE USE	DE-EMPHASIZE USE	NO PLAN TO TRY
Filmstrips (strip films)					
Sound films					
Records					
Tape recordings (language arts, foreign language)					
Tape recordings (other than language)					
2 x 2 slides					
Radio programs					
Television programs					
Overhead projector					
Opaque projector					
Teaching machines					

39. In general, do you think audiovisual materials are best used as an integral part of a course? For supplementary information? Or to highlight a special unit?
44

1 ☐ Integral part of course 2 ☐ For supplementary information 3 ☐ To highlight a special unit

---

Thank you for completing the questionnaire. We would be glad to have any additional comments you wish to make about the use of audiovisual aids in teaching.

Name (please print) ______________________

We are asking for your name so that we can record the fact that you have returned the questionnaire and can exclude you from follow-up mailings. The survey is completely confidential. Your name will not be associated with the findings in any way.

STUDY OF AUDIOVISUAL MEDIA
Sponsored by U. S. Office of Education
AUDIOVISUAL COORDINATOR QUESTIONNAIRE

1. Please return this questionnaire at your earliest convenience. *It should take about 15 minutes to complete.*
2. Disregard the small numbers next to the answer boxes. These are simply to help in coding and tabulating.
3. *All replies will be held in confidence. No individual or school will be identified in the report of this study.*

BACKGROUND INFORMATION

This first section asks for some background information about your teaching career and your assignment as an audiovisual coordinator. If our categories do not quite fit your situation, please add whatever comments are necessary to describe it.

1. Legal Name of School ____________________

2. School Street or Post Office Address ____________________

3. City ____________________ County ____________________ State __________

4. Are your responsibilities as audiovisual coordinator a major assignment, a secondary assignment, or an incidental duty?
11

1 ☐ Major assignment   2 ☐ Secondary assignment   3 ☐ Incidental duty

5. Approximately how much of your time a week is spent on audiovisual duties?

1 ☐ Less than ¼ time   3 ☐ More than ½ time
2 ☐ ¼ to ½ time   4 ☐ Full-time

6. What is your *major* job title?

1 ☐ Classroom teacher   3 ☐ School librarian
2 ☐ Assistant principal   9 ☐ Other ____________________

7. Please circle the grade level(s) you teach.

K 1 2 3 4 5 6 7 8 9 10 11 12 13 14 None

8. What subject(s) do you teach? If more than one, please give your *major assignment first.*
20

____

____

9. Including this year, how many years have you had audiovisual responsibilities *in this school?*
27

________(years)

10. Including this year, how many years have you had audiovisual responsibilities in all?

________(years)

11. Do you prefer audiovisual duties to other non-teaching assignments?
31

1 ☐ Yes 2 ☐ No

Please comment ______________________________

____

____

12. Below is a list of services which audiovisual coordinators perform. Which THREE best describe the major services you perform? *PLEASE CHECK ONLY THREE*
34

1 ☐ Suggesting appropriate audiovisual materials for classroom use
2 ☐ Teaching teachers to operate equipment
3 ☐ Suggesting new or different uses of available materials
4 ☐ Keeping teachers up-to-date on new audiovisual materials
5 ☐ Ordering materials and scheduling equipment
6 ☐ Repairing and maintaining the equipment
7 ☐ Classifying and storing materials
8 ☐ Preparing specialized audiovisual materials
9 ☐ Other *(Specify)* ______________________________

____

13. Have you had any special training or course work in the use of audiovisual aids?
37

1 ☐ Yes 2 ☐ No

14. IF YES What types of audiovisual training have you had? *Please check all answers that apply.*

1 ☐ College or university course
2 ☐ Summer workshop
3 ☐ Inservice training during school year
9 ☐ Other ______________________________

15. Please check the highest degree you hold.

1 ☐ Teaching certificate
2 ☐ A. A.
3 ☐ B.A., B.S., B. Ed.
4 ☐ M.A., M.S., M. Ed.
5 ☐ Ph. D., Ed. D.
9 ☐ Other ______________________________

16. Major field for highest degree? ______________________________ 17. Year received? ______________
40

18. Sex: 1 ☐ Female 2 ☐ Male 19. Year of birth? ______________________________
45

OVERVIEW OF AUDIOVISUAL MEDIA

20. Below is a list of difficulties educators have experienced in using audiovisual aids. Please indicate which are important problems in your school.
PLEASE CHECK EITHER THE YES ☐ OR NO ☐ FOR EACH STATEMENT
11

	YES	NO	
1	☐	☐	Teachers do not have enough time to preview or prepare materials adequately.
2	☐	☐	Teachers find it difficult to integrate available audiovisual materials into their lesson plans.
3	☐	☐	Teachers don't have enough information to know what materials are most appropriate for their grade level.
4	☐	☐	Many classrooms are not properly set up to use audiovisual aids.
5	☐	☐	Teachers do not have enough time to do all the basic teaching they should, let alone use audiovisual aids.
6	☐	☐	Much of the equipment is too difficult to operate.
7	☐	☐	Much of the equipment is in poor repair or obsolete.
8	☐	☐	Some subject areas have few good audiovisual materials.
9	☐	☐	There is too much "red tape" involved in ordering materials and scheduling equipment.
10	☐	☐	Students look on audiovisual lessons as "entertainment" and do not "study" material presented.
11	☐	☐	Audiovisual aids are too expensive for the results achieved.
12	☐	☐	Materials or equipment frequently cannot be made available when needed.
13	☐		Other *(Specify)*____
14	☐		There are no difficulties in using audiovisual aids in our school.

21. Audiovisual media may serve a number of purposes. How often are they used for each of the following purposes in your school? *PLEASE CHECK ONE ANSWER FOR EACH USE*
25

USE	RELATIVE FREQUENCY			
	VERY OFTEN	SOMETIMES	SELDOM	NEVER
To motivate students to learn				
To enrich material given in text or class discussion				
To review material given in text or class discussion				
To present new material (for direct teaching)				
To illustrate a principle				
To provide general background for a unit				
For cultural activity				

22. How would you like to see each of the following audiovisual aids used in your school during the next two years? *PLEASE CHECK ONE ANSWER FOR EACH AID LISTED*
32

MEDIA	WOULD LIKE TO TRY	CONTINUE PRESENT USE	EMPHASIZE USE	DE-EMPHASIZE USE	WOULD NOT RECOMMEND
Sound films					
Filmstrips (strip films)					
Overhead projectors					
Opaque projectors					
Tape recordings (language arts, foreign language)					
Tape recordings (other than language)					
2 x 2 slides					
Records					
Radio					
Broadcast television					
Closed circuit television					
Teaching machines					

23. In general, do you think audiovisual materials are best used as an integral part of a course? For supplementary information? Or to highlight a special unit?
44

1 ☐ Integral part of course
2 ☐ For supplementary information
3 ☐ To highlight a special unit

Please add any comments you would like to make about the audiovisual program in your school.

Name (please print)______________________________

We are asking for your name so that we can record the fact that you have returned the questionnaire and can exclude you from follow-up mailings. The survey is completely confidential. Your name will not be associated with the findings in any way.

BUDGET BUREAU #51-6316
APPROVAL EXPIRES JUNE 30, 1964

BUREAU OF SOCIAL SCIENCE RESEARCH INC.
1424 Sixteenth Street, N.W. Washington, D.C. 20036

AUDIOVISUAL MEDIA IN THE PUBLIC SCHOOLS: A FOLLOW-UP STUDY

Conducted for The U.S. Office of Education

ENROLLMENT AND AUDIOVISUAL INVENTORY

1. Name of School District ____________________

2. Who is responsible for administering audiovisual activities for the school district?

Name ____________________ Position ____________________

3. How much of this person's time is regularly scheduled for audiovisual duties?

☐ Full-Time ☐ Part-Time ☐ As needed; no regular time allotted

4. In the table below, please give the number of schools, full-time teachers, and pupils enrolled as of your *first* report date for the fall of 1963. (The figures in the 1960 columns were taken from your 1961 questionnaire.

TYPE OF SCHOOL	NUMBER OF SCHOOLS		NUMBER OF FULL-TIME TEACHERS		PUPIL ENROLLMENT	
	1960	1963	1960	1963	1960	1963
Elementary						
Secondary						
TOTAL						

Elementary School: A school which provides elementary education as determined under state law. Kindergarten pupils should be included in elementary school enrollment figures.

Secondary School: A school which provides secondary education as determined under state law. Junior college pupils should be included in secondary school enrollment figures.

Full-Time Teacher: All full-time instructional personnel in your school district, including teachers, principals, supervisors, librarians, and psychological and guidance personnel.

5. IN COLUMN A, we have recorded the inventory figures from the 1961 questionnaire.

IN COLUMN B, please give the *total number of units* of the following items of audiovisual equipment now owned by your school system, whether they are listed on a central inventory or owned by individual schools. If exact figures are not available, *please estimate*.

IN COLUMN C, please estimate the number of additional units of equipment needed *to serve your present teaching program and enrollment.*

	TYPE OF EQUIPMENT	TOTAL NUMBER OWNED		ADDITIONAL NUMBER C. NEEDED
		A. 1961	B. 1963	
1	16 mm sound projectors			
2	Comb. slide-filmstrip projectors			
3	Filmstrip (only) projectors			
4	2 x 2 slide (only) projectors			
5	Opaque projectors			
6	Overhead projectors			
7	Television receivers			
8	Language laboratory installations			
9	Teaching machines			
10	Programmed texts			
11	Record players (all speeds)			
12	Tape recorders			
13	Radio receivers			
14	8 mm sound projectors			

6. Have you installed closed-circuit television equipment either on a system-wide basis or in individual schools since 1961?

☐ Yes ☐ No, but are considering ☐ No, and no plans for closed-circuit TV

7. IF YES: What kind of installation do you have?______________________________

____

____

8. Have you introduced any of the following types of instruction into your school system since 1961? *PLEASE CHECK ONE ANSWER FOR EACH MEDIUM.*

	TYPE OF INSTRUCTION	USED IN 1961	HAVE INTRODUCED SINCE 1961	HAVE NOT INTRODUCED
1	Regular television instruction (complete course or integral part of course) . . .	☐	☐	☐
2	Overhead projector	☐	☐	☐
3	Programmed texts	☐	☐	☐
4	Teaching machines	☐	☐	☐
5	Language laboratory	☐	☐	☐

APPLICABILITY OF NEWER MEDIA

9. Below is a list of factors that influence educators to try a new type of instruction. Which of them have been most important in your decision to encourage the use of ANY of the five media given below? Please *circle* the numbers corresponding to the THREE most important factors in helping you make your decision. If you do not use one of the media, circle the "0" on the appropriate row.

1 Personal experience with technique
2 Speeches at professional meetings
3 Articles in professional journals
4 Technical or research reports
5 Demonstrations at professional meetings
6 Observation of a program in action
7 Talking with neighboring superintendents
8 Demonstrations by the manufacturer
9 Requests from teachers
10 Requests from school board
11 Requests from administrative personnel
12 Requests from parents

PLEASE CIRCLE ONLY THREE NUMBERS FOR EACH MEDIUM. IF YOU DO NOT USE A TECHNIQUE, CIRCLE THE "0" AT THE BEGINNING OF THE ROW.

A TELEVISION INSTRUCTION

0 1 2 3 4 5 6 7 8 9 10 11 12

Other (specify)____

B OVERHEAD PROJECTOR

0 1 2 3 4 5 6 7 8 9 10 11 12

Other (specify)____

C PROGRAMMED TEXTS

0 1 2 3 4 5 6 7 8 9 10 11 12

Other (specify)____

D TEACHING MACHINES

0 1 2 3 4 5 6 7 8 9 10 11 12

Other (specify)____

E LANGUAGE LABORATORY

0 1 2 3 4 5 6 7 8 9 10 11 12

Other (specify)____

10. Below is a list of factors that make it *difficult* for educators to introduce a new type of instruction. Which of them have been most important in your decision NOT to encourage the use of one or more of the five media given below? Please *circle* the numbers corresponding to the THREE most important factors in helping you make your decision. If you are presently using any of the media, circle the "0" on the appropriate line.

1 Building program takes priority

2 Salary raises take priority

3 Extensive classroom remodeling required to use medium

4 Technique too expensive for results achieved

5 Too few good materials available to use with medium

6 School system too small to justify use of medium

7 Alternative teaching methods just as good or better

8 Need more evidence of the value of the technique

9 Too difficult to schedule the use of the equipment

10 Materials available do not fit our curriculum well

11 Preparation of materials takes too much of teachers' time

12 Too few teachers are trained to use the technique

13 School board is not convinced of the value of technique

14 Teachers are not convinced of the value of technique

15 Parents are not convinced of the value of technique

16 Use of the medium in neighboring districts has not been too successful

PLEASE CIRCLE ONLY THREE NUMBERS FOR EACH MEDIUM. IF YOU USE A TECHNIQUE, CIRCLE THE "0" AT THE BEGINNING OF THE ROW.

A TELEVISION INSTRUCTION

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

Other (specify)____

B OVERHEAD PROJECTOR

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

Other (specify)____

C PROGRAMMED TEXTS

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

Other (specify)____

D TEACHING MACHINES

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

Other (specify)____

E LANGUAGE LABORATORY

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

Other (specify)____

EVALUATION AND FUTURE PLANS

11. What criteria do you use for evaluating the effectiveness of the use of audiovisual media in your district?

A.

B.

C.

12. For each of the audiovisual media listed below, please give the grade level(s) and subject(s) in which there has been the *most effective* use of the medium. (For example: Radio–6th grade biology; 12th grade English). *PLEASE ANSWER FOR ALL MEDIA WHICH YOUR TEACHERS HAVE BEEN ABLE TO USE EFFECTIVELY.*

MEDIA	GRADE LEVEL(S) AND SUBJECT(S) WHERE USED EFFECTIVELY
1 Sound films:	
2 Filmstrips:	
3 Records:	
4 Radio:	
5 Tape recordings:	
6 Opaque projector: . . .	
7 2 x 2 slides:	
8 Television:	
9 Programmed texts: . . .	
10 Teaching machines: . .	
11 Overhead projector: . .	
12 Language Laboratory:	

13. Looking ahead for the next two or three years, what use do you see in your school district for each of the following instructional techniques? *PLEASE CHECK ONE ANSWER FOR EACH MEDIUM.*

MEDIA	NO PLAN TO USE	EXPERIMENTAL USE	CONTINUATION OF PRESENT LEVEL OF USE	INCREASED USE
1 Sound films	☐	☐	☐	☐
2 Filmstrips	☐	☐	☐	☐
3 Records	☐	☐	☐	☐
4 Tape recordings	☐	☐	☐	☐
5 2 x 2 slides	☐	☐	☐	☐
6 Overhead projector	☐	☐	☐	☐
7 Opaque projector	☐	☐	☐	☐
8 Television instruction	☐	☐	☐	☐
9 Language laboratory	☐	☐	☐	☐
10 Radio instruction	☐	☐	☐	☐
11 Programmed texts	☐	☐	☐	☐
12 Teaching machines	☐	☐	☐	☐

14. A recent study suggests that the school administrator must take the initiative in introducing a new instructional technique, such as a language laboratory, television instruction, programmed learning, etc. Then he must convince the faculty, the school board, and sometimes the parents of its value. In general, how receptive have these three groups been to the introduction of new audio-visual techniques in your school system?

Name________________________ Position______________________________

To Provide Information

is a primary responsibility of a professional organization. The Department of Audiovisual Instruction is proud to present these publications to its members and to other educators who wish to be informed about the rapidly developing field of audiovisual technology in today's school.

Educational Facilities with New Media edited by Alan C. Green, 1966, 212 pp. Of considerable value to educational media specialists, school administrators, and architects this important book is divided into three parts: "A Guide for Policy Makers," "A Guide for the Design Professions" and "A Technical Guide." This work is based on a two-year project of the Center for Architectural Research at Rensselaer Polytechnic Institute. $4.50 (stock No. 071-02302)

Language Laboratory and Language Learning by Elton Hocking, DAVI Monograph #2, Second Edition, 1967, 221 pp. This well-known, nontechnical discussion in depth of the language laboratory as an instructional device now features a completely new selected bibliography of 230 references. The Second Edition also features a descriptive listing of language tests, materials centers and motion pictures relating to language teaching methodology. $4.50 (stock No. 071-02642)

Teaching Machines and Programed Learning, II: Data and Directions edited by Robert Glaser, 1965, 831 pp. Based on a Carnegie-sponsored research symposium, this comprehensive work includes 17 chapters of detailed and thoughtful assessment by today's leading scientists and practitioners including Skinner, Lumsdaine, Glaser, Klaus, Gagne, Holland, Stolurow, Komoski, and Kersh. $11.50 (stock No. 071-02390)
Bibliography and Index.

Recommendations for Reporting the Effectiveness of Programed Instruction Materials, 1966, 36 pp. The final report, with criteria, from the Joint Committee on Programed Instruction and Teaching Machines representing the American Educational Research Association, the American Psychological Association and the Department of Audiovisual Instruction. $1.00 (stock No. 071-02814)

AV Communication Review, a quarterly journal devoted to the application of technology to the instructional process. $6 per year.

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